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THE PROTECTION OF PERSONNEL ENGAGED IN ROENTGENOLOGY AND RADIOLOGY*

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WITH recent evidence suggesting that radiologists have a higher death rate from leukemia than their colleagues,[1-3] protection from the dangerous effects of radiation in the fields of diagnosis, therapy and research becomes a subject of increased importance. Currently, a total exposure dose of 0.3 r per week is the accepted limit of safety.[4] But whether this limit is really safe,[5] or, indeed, whether it has much meaning at all is open to challenge.

It should be apparent that ionizing radiant energy, capable of penetrating to the blood-forming organs, produces quite a different effect upon the body as a whole than radiation that is absorbed for the most part by the skin. This fundamental principle was correctly understood by Mutscheller,[6] who realized that a long wave-length tolerance dosage did not apply in the shorter wave-length ranges, and called attention to the great length of time required for the accumulation of an injurious dosage of "hard" radiation, and to the long latent period before resulting changes are positively recognized.

In the field of medical radiology, knowledge of radiation hazards has remained particularly unsatisfactory because of the difficulty in making precise determinations of exposure sustained in various diagnostic technics, and because relatively little effort has thus far been made to correlate such continuously repeated exposures with the ultimate biologic response. For these reasons, a program has been undertaken at the Massachusetts General Hospital with the object of establishing a more quantitative basis for relating radiation exposure to morphologic changes in the peripheral blood, and of determining the value, if any, of the peripheral blood picture as an early index of bone-marrow injury.

It was recognized from the start that this study should correlate adequate recorded information on the quantity and quality of radiation received by personnel during routine procedures with progressive blood changes over long intervals. The present communication is therefore a preliminary one. It describes a film badge developed during the course of the investigation that gives quantitative information on both the exposure dose and its quality, presents the results of physical studies made on the direct and scattered radiation to which personnel may be exposed, discusses the significance of these data and comments briefly on some early results of monitoring.

Measurements have been made of the intensity and quality of direct-beam radiation, and of scattered radiation from a phantom irradiated under conditions similar to those present during fluoroscopy. Braestrup,[7] it is true, has pointed out that "Masonite pressdwood" phantoms are rather inaccurate for measurements of radiation below 200 kvp; but inasmuch as it was considered unwise to expose a particular patient long enough for certain determinations to be made, it seemed advisable to use this convenient material.

The present study has shown that, contrary to generally recorded opinion,[8] the 90° scattered radiation from a phantom subjected to fluoroscopic radiation is actually more penetrating than the direct beam that produces it. This important but hitherto unappreciated fact has the following physical explanation: The phantom subjected to radiation produced at 50 to 140 kvp behaves as a filter and absorbs most of the "softer" components of the heterogeneous beams. Those scattered x-rays capable of emerging from the depth of such a phantom would be produced chiefly by the Compton-scattering process. Compton-scattered photons, however, are increased in wave length by only 0.024 Ångstrom unit for 90° scattering. This relatively small increase in wave length has little effect on the quality of the more penetrating components of the original beam, the softer components of which have been largely eliminated by absorption. As a result, the total scattered radiation,

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though greatly reduced in intensity, has its average wave length shifted closer to the minimum wave length of the direct beam. Such scattered radiation must therefore be regarded as capable of reaching the blood-forming organs of the examiner in significant amounts.

Figure 1 (calculated from Ulrey[9]) shows the attenuation of intensity and the displacement of the average wave length of the 50 kvp tungsten spectrum toward the shorter wave-length region

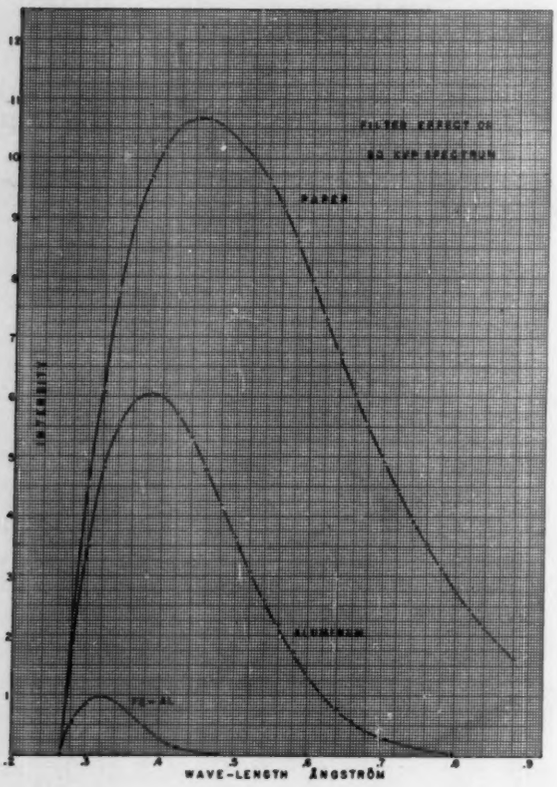

FIGURE 1. *The 50 Kvp Tungsten Spectrum.*
Attenuation of intensity and displacement of the average wave length toward the shorter wave-length region by filtration (modified from Ulrey[9]).

by filters of 1.0 mm. of paper (carbon), 1.0 mm. of aluminum, and by the steel-aluminum "window" of the film badge described below. These curves clearly illustrate how selective absorption of the "softer" components results in radiation with a "harder" average quality than that of the original heterogeneous beam.

Measurement by Ionization Chambers and Film Badges

Ionization Chambers

Comparative studies were made of the suitability of several types of ionization chambers for intensity measurements in the kilovoltage range from 50 to 140. It was recognized that for the lower voltages care must be taken to avoid excessive wall thickness, not only because of the softness of the radiation but also since the reading would be relatively more dependent on the atomic constituents of the "air-wall" material.

The instruments eventually used were Victoreen chambers of 25.0 r and 0.25 r capacity and two 0.2 r full-scale pocket electrometers of the minometer type. Because eight minometers in test exposures showed rather large variations in individual sensitivity, two that gave the most consistent readings were employed in all the experiments. It was found that the 0.25 r Victoreen chamber and this pair of minometers gave equivalent readings for 70 kvp and above. But in the region below 70 kvp, the minometer chambers showed advantages, presumably because of the thinner wall of the thimble. Finally, to reduce measurement errors to a minimum, in most of the experiments film badges and one or both types of ionization chambers were exposed simultaneously to the radiation.

Film Badges

Film-badge characteristics. To distinguish between the wide range of wave lengths characteristic of diagnostic roentgenology and therapeutic radiology, a film badge, similar in some respects to the one used by Braestrup,[10] was provided with four filters or "windows." After a number of trials the following filters proved satisfactory: 1.015 mm. (0.040″) cadmium; 0.254 mm. (0.010″) tool steel plus 0.762 mm. (0.030″) aluminum*; 1.015 mm. (0.040″) aluminum; and an open "window." In order to prevent rusting, the steel filter was "gunmetalled" by treatment with ammonium polysulfide. Small holes drilled through one end of the cadmium filter were spatially arranged to form a code number. Before removal of the film for development, the remainder of the badge could be covered with lead, and the code number recorded for identification purposes on the film beneath the cadmium window with low-voltage x-ray.

In processing films, remarkably consistent results were obtained when the following technic was meticulously carried out: A fresh solution is made each time a series of films with unexposed controls is to be developed. A 1-gallon-size can of Eastman rapid-developing powder is dissolved in 2 gallons of water in a glass jar. When the solution has been stirred well and the temperature adjusted to *exactly* 68°F., the films are developed for *exactly* six minutes, being agitated once or twice meanwhile. After being rinsed the films are placed in hypo for ten minutes, and then they are washed for twenty minutes and dried. (After the films had been placed in the hypo, it was found the light should not be turned on until two minutes had elapsed.) Calibration against an r-meter must be made for each film-emulsion lot-number.

*Henceforth this filter is referred to as the *steel filter*.

Over an exposure range between 0.005 and 0.14 r for a given radiation quality, the net film density, D, beneath any one of the four "windows" was found to be a linear function of the exposure, r, as measured in roentgens by an ionization chamber. Thus

$$rk = D \quad (1)$$

where k is a constant determined by both the filter and the film emulsion employed.

Moreover, each filter transmits monochromatic radiation in accordance with the equation

$$r/r_o = e^{-\mu x} \quad (2)$$

where r_o and r are the initial and final values, x is the thickness of the filter in cm., μ is the absorption coefficient of the particular material, and e is the base of natural logarithms. And since an equation of similar form describes the absorption of a heterogeneous beam of radiation, such a beam of rays may be represented by a single "effective" wave length on which the filter produces equivalent attenuation.

The relations in equations (1) and (2) may therefore be applied to the film densities produced under the aluminum and steel filters. Since the incident radiation r_o is the same for both filters, we find that

$$\log D_a/D_s = \mu_s x_s - \mu_a x_a \quad (3)$$

where the subscripts denote aluminum or steel.

For filters of fixed thickness the difference between the two terms on the right-hand side of equation (3) in spectral regions with no absorption discontinuity is determined by the wave length in the case of monochromatic radiation, or by the "effective" wave length in the case of a heterogeneous beam. Hence *the log ratio of the film density beneath any pair of "windows" — for example, aluminum and steel — is a measure of the quality of radiation and is independent of the quantity.* The quality of the radiation used in this study has been specified both in terms of the log of the film-density ratio under the aluminum and steel windows (log D_a/D_s) and in the conventional form of half-value layer (hvl) of aluminum.

Advantages of film badges. Study was made of the comparative value of pocket ionization chambers and filtered film badges for measuring the radiation received by personnel over a period of two weeks. This led to the selection of film badges for the following reasons:

The use of an open "window" and three metal filters permits an adequate determination of radiation exposure and quality on a single film.

With a photoelectric spectrophotometer capable of isolating a narrow wave-band width (140 Å at 5600 Å), reproducibility of film-density readings was found to be 2 per cent or better.

Stock dental films (Du Pont No. 550) thus exposed to diagnostic x-rays are capable of giving a measurable indication of heavy radiation exposure and, in the exposure-range of greatest interest (0.01 r to 0.14 r), show a linear relation between film density and total roentgens received.

By means of special sensitive films (Du Pont No. 552), exposure to kilovoltages above 200 and to gamma radiation can be similarly quantitated.

Unlike ionization-chamber electrometers, dental films are less subject to individual variations in sensitivity and do not give rise to errors from electrical leakage.

The film badge is more conveniently worn, and the developed film furnishes a permanent record.

Disadvantages of film badges. Film badges are inconvenient in two respects: fresh standards must be made whenever a new film emulsion is used, and they must be prepared by exposure to the particular type of radiation to be measured. Figure 2 shows log D_a/D_s values for three different film emulsions obtained in the direct beam 8 feet from the target at kilovoltages of 50, 70 and 90, and with a filtration of 1.0 mm. of aluminum. As these curves show neither parallelism nor consistent differences, it

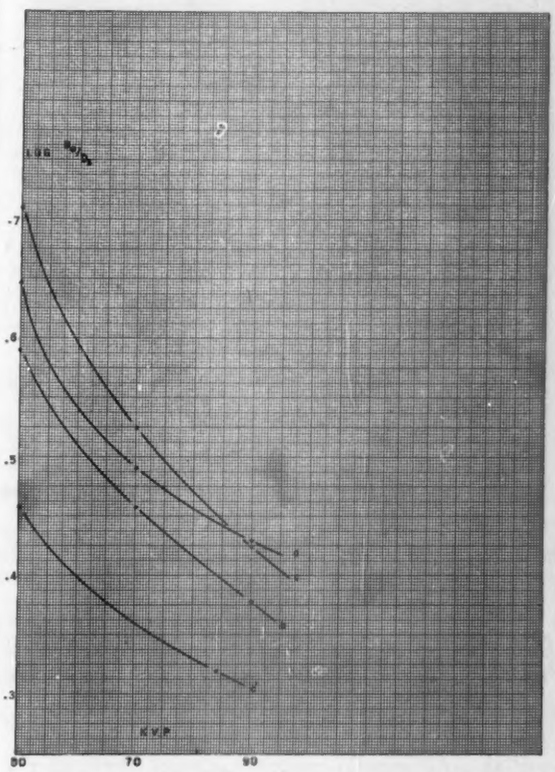

FIGURE 2. *Quality Measured by Film Badges (Log D_a/D_s): 1-mm. Aluminum Filtration.*

a, b, c = *direct beam with different film emulsions*; c′ = *side scatter with film emulsion the same as* c.

is apparent that measurements made with one film emulsion cannot be referred to standards made with a different one. This drawback, however, can be minimized if one obtains a supply of the same film emulsion sufficient for a period of several weeks.

Because scattered x-radiation has a "harder" quality than the generating direct beam, standards for the measurement of scatter must be obtained by simultaneous exposure of film badges and minometers to an arbitrarily selected source. For monitoring purposes, an easily reproducible and convenient source proved to be at a point 90° lateral to and 12.5 cm. from a phantom placed on a fluoroscopic table, with the field margin 2.5 cm. from the phantom edge, a filtration of 1.5 mm. of aluminum, and a kvp of 85 (Fig. 3 *C*). These filtration and kvp factors were chosen because of their general employment in fluoroscopic procedures. This site for the film badge was selected, because it approximates the position of the roentgenologist's lower torso when he is fluoroscoping a patient, and is the point of greatest intensity of scattered radiation.[10]

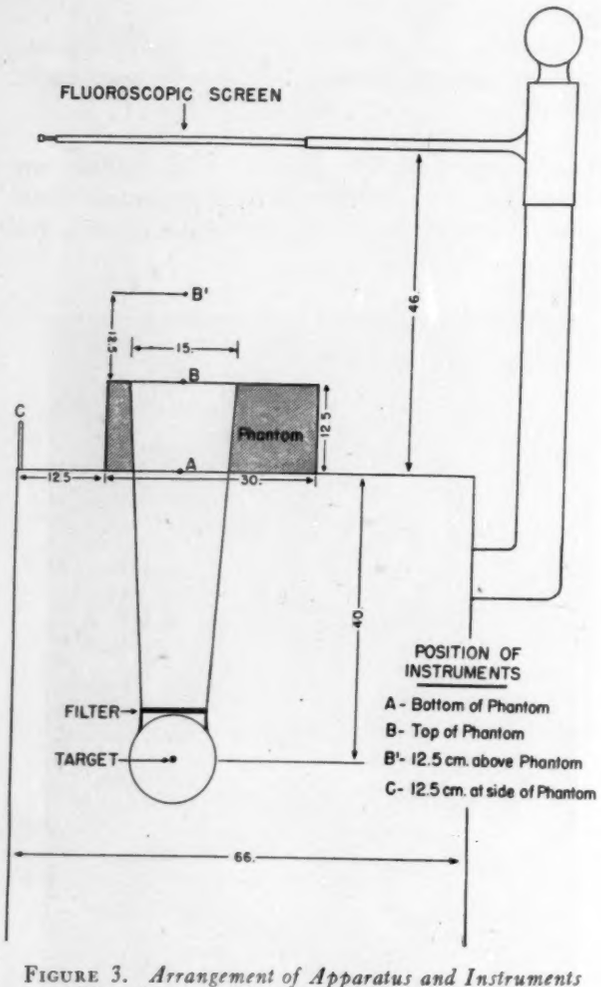

FIGURE 3. *Arrangement of Apparatus and Instruments (Viewed from the Foot of the Fluoroscopic Table).*

ARRANGEMENT OF INSTRUMENTS

Figure 3 shows diagrammatically the general arrangement of tube, table and phantom, and the position of ionization chambers and badges in the experiments to be described. In all cases the phantom was composed of layers of "Masonite pressdwood," with over-all dimensions of 30 by 30 by 15 cm. Except in field-size studies the x-ray field was 15 by 15 cm., measured on the phantom top. The diagram shows the field centered so that the margin of the field is 2.5 cm. inside the phantom edge. This field position was employed in the early studies, and is now the standard arrangement when film badges are calibrated for monitoring purposes. However, in the series of observations on filtration and on kilovoltage effects between 50 and 140 kvp, the field was centered on the center of the phantom.

At the point marked *A*, minometers were placed on the table surface with the phantom resting on top of them, in order to measure the intensity on the patient's skin when subject to direct beam and back scatter. (This is designated on the charts as *A'*). Because the back of the film badge was made of steel, and dental films carry a thin foil backing consisting of lead, antimony and tin, quality measurements at this site (to include back scatter) could not be made by means of films. Quality was determined, however, by *both* minometers (hvl) and badges on the table top after removal of the phantom (*A*). Position *B*, directly on top of the phantom, represents the position of the palpating hand of the roentgenologist or the location of the fluoroscopic screen. Measurements were also made at *B'*, 12.5 cm. above the phantom, but because these figures merely supplement the data obtained at *B*, they have not been presented. Lastly, both *C* and *C'* represent the position at the side of the table where the roentgenologist's lower torso comes nearest to the table edge; *C* indicates that the field margin is 2.5 cm. from the phantom edge, and *C'*, that the field is centered on the phantom's center. Although these sites for the instruments were recognized as being somewhat arbitrary, it was believed that they were critical points where radiation should be measured.

For convenient reference, these arrangements of the instruments and apparatus are listed:

A = table top without phantom (no back scatter).
A' = table top with phantom (back scatter).
B = phantom top.
B' = 12.5 cm. above phantom.
C = side scatter; field 2.5 cm. from the phantom edge.
C' = side scatter; field 7.5 cm. from the phantom edge (field and phantom centers coincide).

Quality Measurements with Film Badges of Side Scatter Between 50 and 90 KVP

Early in the study it became evident that x-ray quality as measured by film badges (log D_a/D_s) was considerably "harder" for 90° scatter from the phantom (point *C*) than for the direct beam itself. This is illustrated in Figure 2 in which *c* is a log D_a/D_s curve for the direct beam at 50, 70 and 90 kvp, and *c'* is the corresponding one for side scatter at 50 and 84 kvp — both sets of measurements being made with films of the same emulsion number. Under the open "window," on the other hand, the net film density for the same r value at these different voltages was practically unchanged, whereas log D_a/D_s decreased as the kvp rose. Hence, in monitoring, total r received could be determined from the open "window" density, and the quality from the log ratio of the aluminum and steel densities.

Observations were also made on the quality of scatter at different positions lateral to the phantom, namely: 7.5 and 12.5 cm. toward the side of the table, 7.5, 9.0 and 12.5 cm. toward the foot of the table, and at the Bucky slot after removal of the phantom. With a 20-by-20-cm. field, filtration of 1.67 mm. of aluminum, and 84 kvp, quality as determined by log D_a/D_s values was relatively the same for all points enumerated.

Effect of Field Size on Intensity and Quality of Side Scatter

The factors used in making the following measurements were: 85 kvp, 4 ma and 1.67 mm. of aluminum filtration. Figure 4 shows the results of varying the field size. When the center of a square field coincides with the center of the phantom (*C'*), side-scatter *intensity* increases with the area of the field (the square of the field dimension). However, when the margin of a square field is kept at a fixed distance within and close to (2.5 cm.) the phantom edge (*C*), intensity, while initially much greater, increases somewhat less than linearly with the field dimension. These findings are in accord with measurements made by Cilley, Leddy and Kirklin,[12] who have emphasized the protective value of maintaining at all times a minimal field size.

In contrast to these intensity variations, there is no change in side-scatter *quality*, as measured by film badges, when the centered field (*C'*) is increased from 10 by 10 to 20 by 20 cm. Moreover, the quality of scatter from the 15-by-15-cm. field is the same either centered (*C'*) or near the phantom edge (*C*). As pointed out below, this side scatter is quite "hard," and has a half-value layer of 5.9 mm. of aluminum. It is therefore more important than ever to keep the field size as small as possible when a patient is being fluoroscoped.

Comparative Studies of Direct Beam and 90° Side Scatter*

Effect of Filtration on Intensity and Quality at 85 Kvp

Figure 5 shows the effects of filtration on *intensity* at the points denoted as *A*, *B* and *C*, in Figure 3. In addition, curve *A'* gives intensity values on the table top when the phantom resting on the instruments produces back scatter. It will be noted that after the addition of 3 mm. of aluminum, intensities at *A* and *A'* decrease more and more slowly, but that intensities at *B* and *C'* continue to fall

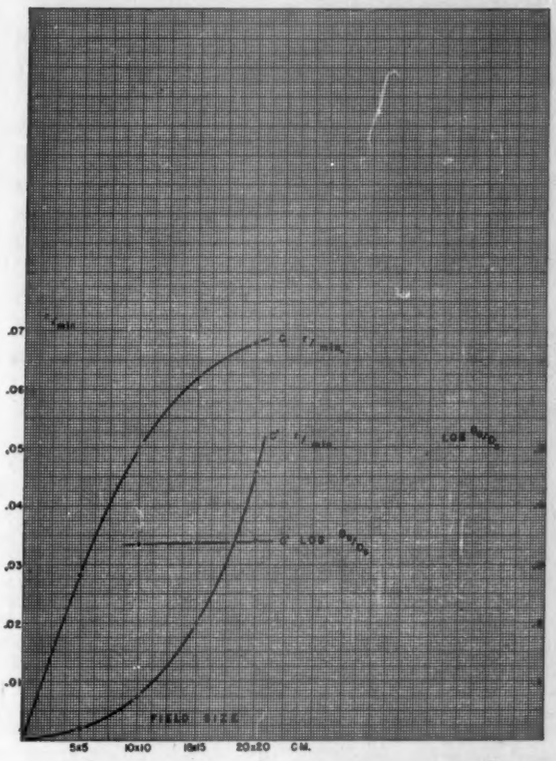

Figure 4. *Effect of Field Size on Intensity (r per Minute) and on Quality (Log D_a/D_s) of Side Scatter: 85-kvp, 4-ma, 1.67-mm. Aluminum Filtration.*

C = *field margin 2.5 cm. inside phantom edge.*
C' = *field margin 7.5 cm. inside phantom edge (field and phantom centers coincide).*

at a relatively constant rate. From this it seems that 3 mm. of aluminum is about the optimal filtration in respect to intensity for fluoroscopic purposes.

Although these findings are somewhat at variance with those of Morgan,[13] they correspond closely enough to have significance. A filtration of 3 mm. instead of 1.5 mm. of aluminum does not noticeably diminish the luminescence of the fluoroscopic screen; yet it does decrease the exposure of the patient (35 per cent), and reduces to some extent (20 per cent) the intensity of the side scatter received by the examiner.

*The x-ray source was a Picker therapy machine with a "Thermax" tube.

After all, the whole purpose of fluoroscopy is to enable the examiner to visualize contrasting shadows on the screen. Hence, if screen luminescence is satisfactory with 85 kvp, 5 ma and a filtration of 1.5 mm. of aluminum, the same screen intensity can be maintained for all thicknesses of filter by varying the milliamperage. The resulting intensity

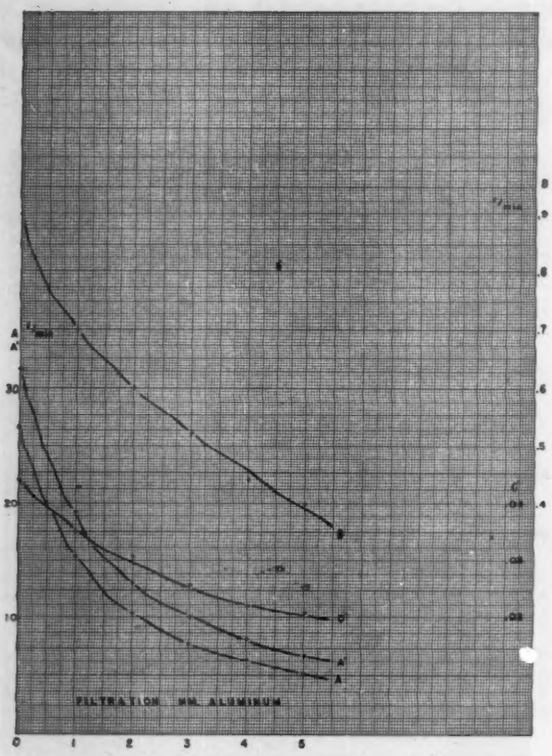

FIGURE 5. *Effect of Increasing Filtration with Aluminum on the Dosage Rate (Intensity in r per Minute): 85 kvp, 5 ma; 0 = Intrinsic Tube Filtration.*

A = *table top (without back scatter).*
A′ = *patient's skin-dosage rate (with back scatter).*
B = *phantom top intensity.*
C′ = *side-scatter intensity (phantom and field centers coincide).*

values may be obtained by normalizing the data from curves *A′* and *C′* (Fig. 5) for a constant screen dosage rate (*B*). These values are shown in Figure 5*A*. It will be seen that filtration up to 5 mm. of aluminum does not affect the dosage rate received by the examiner, but it does attenuate the skin-dosage rate received by the patient — although more than 3 mm. of aluminum produces relatively little further attenuation. Therefore this evidence, too, indicates that 3 mm. of filtration is about optimal.

The effect of filtration on *quality* was measured both by half-value layer determinations (Fig. 6), and by the film-density method, log D_a/D_s (Fig. 7). In practically every instance, quality measurements from films were more consistent and reproducible than corresponding hvl determinations, especially when the intensity was low. This is quite evident if hvl values for *C′* in Figure 6 are compared with corresponding log D_a/D_s values in Figure 7.

From the data presented in these last two figures, increasing the filtration has a relatively slight effect on the *quality* of radiation measured at *B* and *C′*, but does have a considerably "hardening" influence on the radiation striking the table top (*A*). In Figure 6, in particular, hvl values at *A* obviously approach a maximum above which additional filtration causes practically no further increase. These measurements mean that the phantom so effectively filters out the longer components at *B* and *C′* that prefiltration with extra aluminum does little except to diminish the intensity.

Because nearly maximal "hardness" at *A* (measured as the hvl) is reached with 3 mm. of aluminum, this amount of filtration appears to be

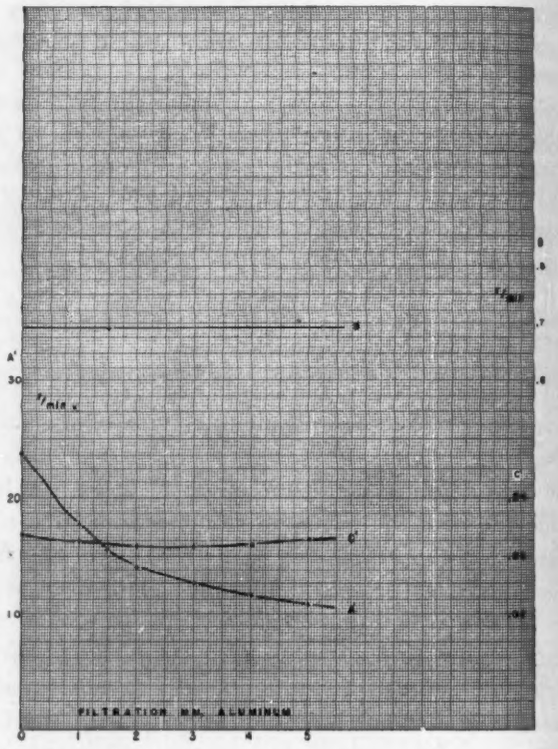

FIGURE 5*A*. *Data from Figure 5: Curves* A′ *and* C′ *Normalized to Maintain a Constant Dosage Rate (Intensity in r per Minute) at* B *(the Phantom Top or Fluoroscopic Screen) for All Values of Filter Thickness. (Normal Screen Intensity Is Taken at the Value for 85 kvp, 5 ma, with 1.5-mm. Aluminum Filtration.)*

A′ = *patient's skin-dosage rate (with back scatter).*
C′ = *side-scatter intensity (phantom and field centers coincide).*

optimal so far as *quality* is concerned. Therefore, taking all data into consideration, it seems fair to conclude that filtration by 3 mm. of aluminum definitely increases protection of the patient, but that more than 3 mm. adds little to the safety factor for either the patient or the roentgenologist.

Effect of Voltage on Intensity and Quality with 1.5-mm. Aluminum Filtration

Figure 8 shows the intensity at points *A*, *A'*, *B* and *C'*, for kvp values between 50 and 140. At *B* the intensity is about 10 times, and at *A*, it is 150 to 200 times that at *C'*. As presented in the figure, these data merely show that intensity increases with the kilovoltage, but when normalized to give a constant intensity falling on the fluoroscopic screen (Fig. 8*A*), other useful information is obtained:

Intensity at *A'* now decreases rapidly and linearly from 50 to 105 kvp, but falls more and more slowly with further increase of kilovoltage. At *C'*, on the other hand, intensity rises slowly and almost linearly up to 105 kvp, and then increases at a continuously accelerated rate. In other words, raising the kilovoltage above 105 increases (percentage-wise) the dosage rate of the examiner more than it decreases the dosage rate on the skin of the patient. From this it follows that optimal kilovoltage must lie within the 85–105 kvp range — provided the milliamperage is kept at 5 or below.

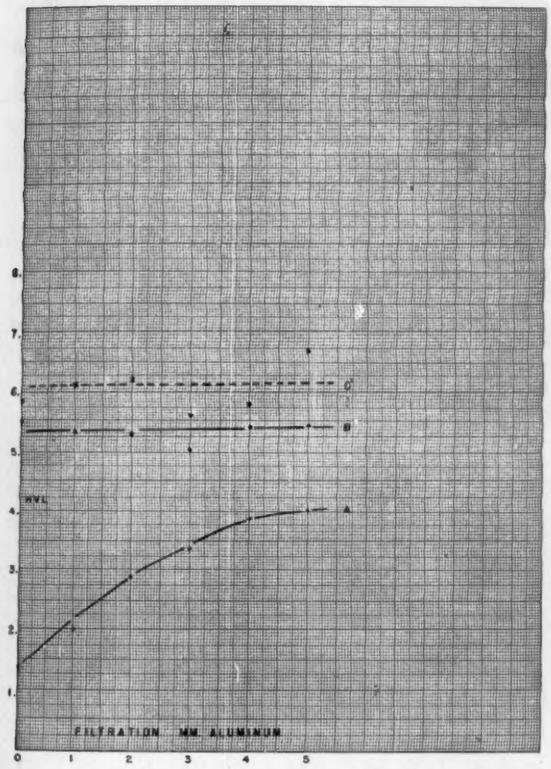

FIGURE 6. *Effect of Increasing Filtration with Aluminum on the Half-Value Layer (hvl): 85 kvp, 5 ma.*
A = *table top (without back scatter).*
B = *phantom top.*
C' = *side scatter (phantom and field centers coincide).*

The effects of voltage on radiation *quality* are shown in Figure 9 and 10. When the hvl and the corresponding kvp values are plotted (Fig. 9), a linear relation obtains in the 85–140 kvp range; whereas log D_a/D_s values, similarly plotted, result in a series of hyperbolic curves (Fig. 10). Between 50 and 85 kvp radiation quality measured both by hvl determinations and by the film method shows persistent irregularities. Moreover, the quality

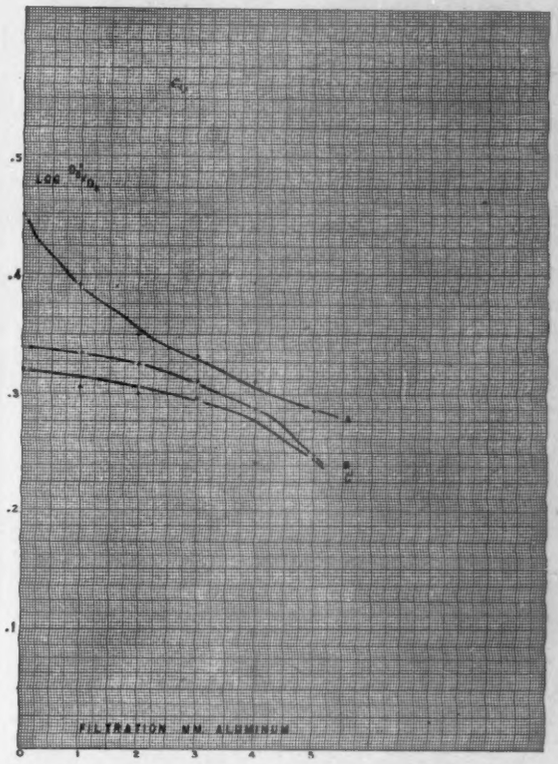

FIGURE 7. *Effect of Increasing Filtration with Aluminum on Quality as Measured by Film Badges: 85 kvp, 5 ma.*
A = *table top (without back scatter).*
B = *phantom top.*
C' = *side scatter (phantom and field centers coincide). (Compare with Fig. 6.)*

at 70 kvp in a large number of observations was consistently "harder" than should be expected. As this could not be due to errors of measurement it was presumed to be caused by additional energy of shorter wave lengths emitted at 69 kvp by the tungsten K-series. This phenomenon, however, requires further investigation.

Leddy, Cilley and Kirklin[13] found that an 85 kvp direct beam, after passing through a 23 cm. "Syncera" wax phantom, had a half-value layer (hvl) of 4.5 mm. of aluminum. In spite of differences in primary beam filtration, phantom thickness and phantom material, the half-value layer as measured by these investigators and by ourselves (*B* = 5.25 mm.) is of the same order of magnitude.

It should be noted that side scatter at 85 kvp has a half-value layer of 5.9 mm. of aluminum, while in the direct beam this value is not reached until

well over 140 kvp. Furthermore, the rapid increase from 85 to 105 kvp of the side-scatter hvl (5.9 to 8.1 mm.) must be taken into account when the optimal kilovoltage value is considered. From the foregoing, it appears that this value lies much nearer to 85 kvp than to 105 kvp. In any event, both side-scatter and direct-beam radiations filtered by the patient have a "hard" quality and are capable of penetrating to the examiner's blood-forming organs.

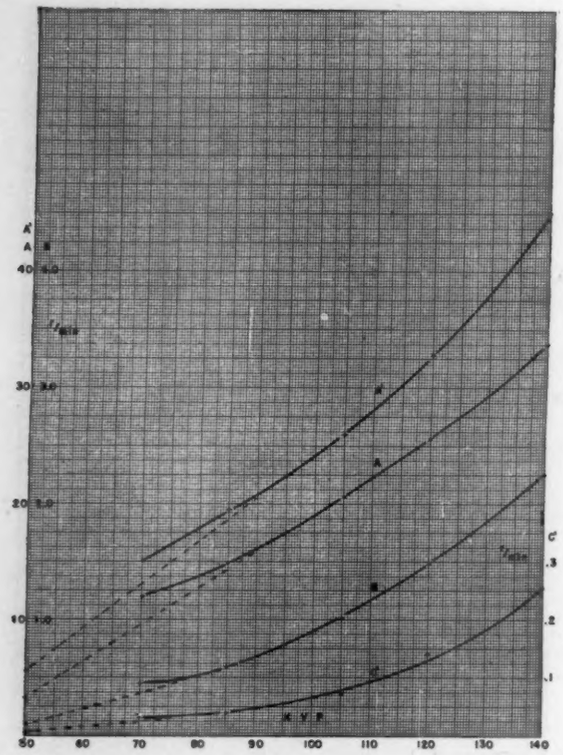

FIGURE 8. *Effect of Increasing the Kilovoltage on the Dosage Rate (Intensity in r per Minute): 5-ma, 1.5-mm. Aluminum Filtration.*

A = *table top (without back scatter).*
A′ = *patient's skin-dosage rate (with back scatter).*
B = *phantom top.*
C′ = *Side scatter (phantom and field centers coincide). Note the high intensity values at 70 kvp.*

Summarizing and interpreting all data obtained thus far, it appears that the optimal factors for fluoroscopic procedures are: a kvp of approximately 85; for this voltage and 5 ma, a tube filtration of 3 mm. of aluminum.

Relation of Log D_a/D_s to the Half-Value Layer (HVL)

It can be shown from the data that log D_a/D_s is a reciprocal function of the corresponding half-value layer — that is, within the range 70 to 140 kvp for *A* and *B*, and within the range 85 to 140 kvp for *C′*. In all cases constants are involved, and these constants differ with each film emulsion employed. Empirical equations derived from the curves in Figures 9 and 10 are:

$$A = \log D_a/D_s - 0.165 = \frac{0.53}{\text{hvl}}$$

$$B = \log D_a/D_s - 0.115 = \frac{0.995}{\text{hvl}}$$

$$C' = \log D_a/D_s - 0.168 = \frac{0.700}{\text{hvl}}$$

For monitoring purposes calibrations of film badges are made with 90° side scatter (*C′*). Since log D_a/D_s and 1/hvl are linear above 85 kvp, film badges must be exposed at two kilovoltages (85, and 105 or 120), in order to establish the constants noted above.

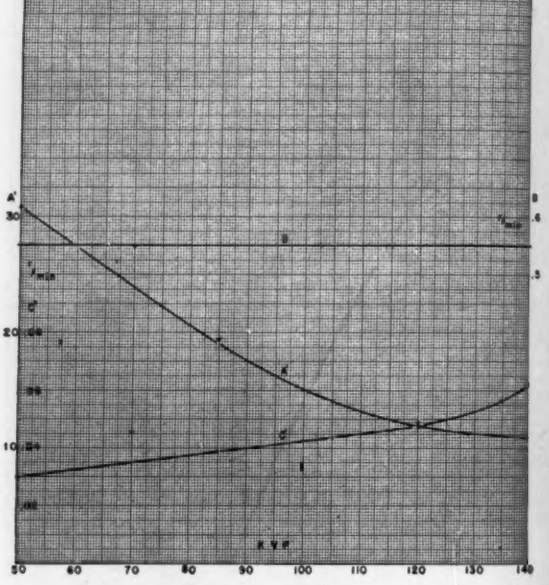

FIGURE 8*A*. *Same Data as those in Figure 8. Curves A′ and C′ Normalized to Maintain a Constant Dosage Rate (Intensity in r per Minute) at B (the Phantom Top or Fluoroscopic Screen), for All Values of Kilovoltage. (Normal Screen Intensity Is Taken at the Value for 85 kvp, 5 ma, with 1.5-mm. Aluminum Filtration.)*

A′ = *patient's skin-dosage rate (with back scatter).*
C′ = *side-scatter intensity (phantom and field centers coincide). Note the high intensity values at 70 kvp.*

Significance of the Physical Data

The material presented consists almost entirely of physical measurements. Admittedly such data are, at times, difficult for the roentgenologist, and often well-nigh impossible for the physician untrained in radiology, to interpret. It therefore seems

important to point out the significance of certain of these observations in such a way that any person employing fluoroscopy can understand it.

In the diagnostic range, between 50 and 140 kvp, the quality of scattered radiation, formerly thought to be "soft," is now shown to be quite "hard." Consequently, the roentgenologist must protect himself and his associates from all of it so far as possible, and must regard all scattered radiation as sufficiently penetrating to reach the bone marrow.

Present evidence (Fig. 4) indicates that during fluoroscopy the patient can serve as a filter, and he should be used intelligently as such. It must be remembered that although the patient receives a large amount of radiation at any one examination, the roentgenologist over a long period of active practice — for example, thirty years — receives an enormously larger total dose. For this reason,

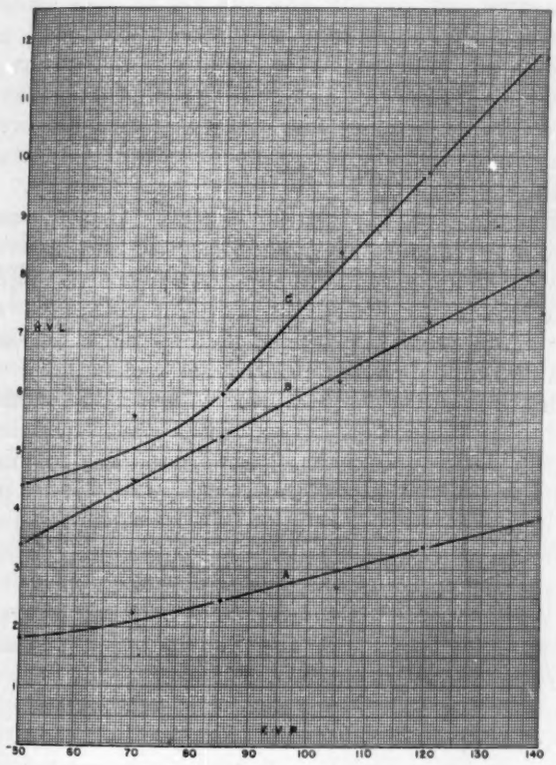

FIGURE 9. *Effect of Increasing Kilovoltage on the Half-Value Layer (hvl): 5-ma, 1.5-mm. Aluminum Filtration.*
A = *table top (without back scatter).*
B = *phantom top.*
C′ = *side scatter (phantom and field centers coincide). Note the high hvl values at 70 kvp.*

the fluoroscopic beam should be centered on the patient as far distant as possible from the examiner and his aides. Although this might be regarded as a crude means of self-protection, it at least reduces the intensity, even though it does not change significantly the quality of the side scatter.

In addition, data derived from Figure 4 show that the spot film and fluoroscopic field size should be kept as small as possible, because, with a square field centered on the patient's mid-line, the examiner receives scattered radiation in amounts proportional to the square of the size of the field. Obviously

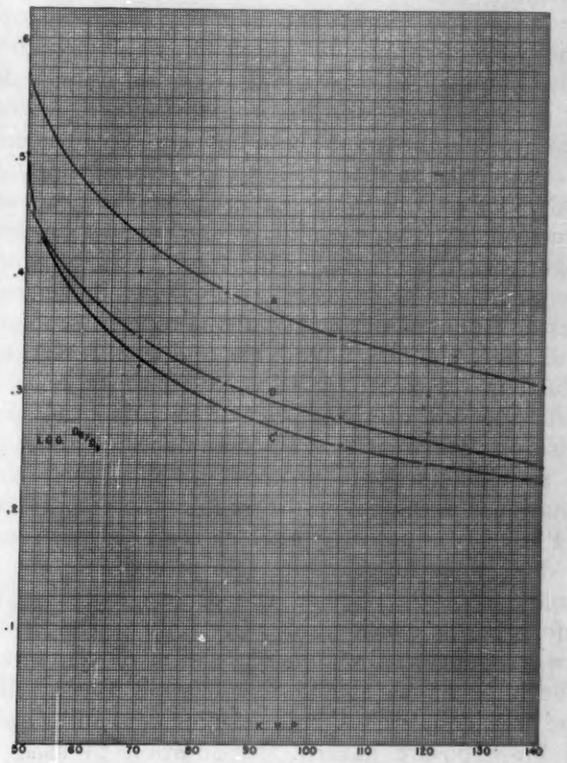

FIGURE 10. *Effect of Increasing Kilovoltage on Quality as Measured by Film Badges: 5-ma, 1.5-mm. Aluminum Filtration.*
A = *table top (without back scatter).*
B = *phantom top.*
C′ = *side scatter (phantom and field centers coincide). Compare with Figure 9.*

careless technic in this respect can quickly result in a high degree of exposure.

From the data shown in Figures 8 to 10, it is clear that one should not increase the kilovoltage to the range between 100 and 130 merely to increase the illumination of the screen. If the intensity on the screen is kept constant (Fig. 8A), there may be certain advantages in increasing the kilovoltage. Nevertheless, it is imperative at all times to use as low a milliamperage as is compatible with proper visualization. However, the relation of kilovoltage and screen brightness requires further investigation with carefully controlled studies of the amount of radiation the patient receives, as well as the intensity and quality of the scatter.

It may appear that the foregoing applies only to the roentgenologist and those assisting or observing with him, but analysis of the evidence reveals that nearly everything applicable to personnel ap-

plies to the patient as well. As shown in Figure 5, 5*A*, 6 and 7, an important safety factor so far as the patient is concerned is a filter of at least 3 mm. of aluminum in addition to the inherent filtration of the tube. This markedly reduces the amount of radiation received by the patient and does not appreciably "harden" the quality of the side scatter.

It goes without saying that the radiologist should use adequate aprons and gloves. A fluoroscopic timer — preferably out of comfortable reach — should be utilized, and the time should be recorded for each examination. Fluoroscopy should be done rapidly. Diaphragms should be inserted in the cone of the tube to limit the field to the screen in all positions. To avoid exposing the top of the head and upper chest, the examiner's eye should be kept aligned with the center of the screen. Fluoroscopic rooms should be large in order to minimize back scatter from ceilings and walls. Properly protected equipment should be available, and it *must* be maintained in excellent condition at all times.

As a result of the observations presented here, it is quite apparent that the manufacturer has failed to provide adequate protection. The usual combination fluoroscopic-radiographic table and large (14″ by 17″) fluoroscopic screen is an obvious source of danger to the examiner. As provided in the ordinary spot-film device the screen increases the safety factor considerably, but only if the field is always kept well within the limits of the screen. The large screen should therefore be discontinued, and it will be, if the roentgenologist is fully aware of his exposure hazard. In addition to this, the table commonly employed today has an open Bucky slot, which transmits large amounts of scattered radiation. Some of the newer tables are enclosed in this dangerous area, but even certain of these are not enclosed on both sides *and* the bottom. An ideal combination table should be *fully* enclosed, including the portion of the Bucky slot not in actual use. If the manufacturer does not provide one in the near future, a safe, fully enclosed table with an under-table cone extending nearly to the table top should be designed for fluoroscopy only. Nevertheless, whatever future table design may be, it still behooves the radiologist to use any and all means possible that increase the protection of the patient, himself and his assistants.

Monitoring X-Ray Personnel

In the Department of Radiology at the Massachusetts General Hospital, roentgenologists and other personnel subject to irradiation in diagnostic work wear film badges containing stock dental film (Du Pont No. 550), while those handling radium or assigned to high-voltage therapy are given film badges carrying special sensitive film (Du Pont No. 552). Male personnel wear the badge at belt level near the trouser watch pocket, and females on the anterior chest. At the end of each day the film badges are removed from uniforms and kept together, so that all are subjected to the same temperature variations.

Every two weeks all badges are collected, the aluminum, steel and open windows are covered with lead, and the code numbers on the cadmium windows are recorded on the film beneath with 45 kvp x-ray. After the films are removed and fresh ones inserted, the film badges are promptly returned. All badges must contain films of the same emulsion lot number; otherwise, two or more sets of standards are required.

Before the films carried by personnel are developed, duplicate standards for both the stock and the special sensitive films are prepared — the latter by exposure of film badges to a calibrated radium source. When this has been done, the films worn by personnel, the film standards and unexposed blank films, are developed as has been previously described.

The film density under each window is then measured, net density and the log ratio of density beneath the aluminum and steel "windows" are calculated, and total r is obtained by location of the open "window" net-density value on a newly made linear graph. The resultant data are eventually recorded on the subject's record card along with the results of the blood examinations.

Examination of the blood consists in a hemoglobin determination (photoelectric-cell technic), a white-cell count and a differential count and description of the stained smear. These examinations are made every two weeks, and, so far as possible, examinations of female personnel are made *between* ovulation and menstruation. When blood samples are being obtained, each subject is questioned about recent health, with particular attention to minor infections or manifestations of allergy. Those persistently showing deviations from the normal are sent to the Staff Clinic for a complete physical examination.

While it is entirely too soon to attempt a correlation of blood changes and radiation exposure, certain observations on monitoring are of interest. In the first place, practically all the personnel in diagnostic work are now receiving less than 0.1 r over a two weeks' period, whereas personnel handling radium are showing a greater exposure, but so far less than 0.3 r in the same period. Secondly, the developed films clearly reveal individual carelessness when it occurs. The absence of film fogging on personnel in known hazardous positions is evidence of failure to wear the film badge, and sharp shadows of the metal "windows" characterize exposure to a direct beam.

Although the monitoring has only been in effect since Septermber, 1948, most personnel have shown progressively lower exposures. Should this happy trend continue, it may well be that the psychologic effect of having to wear a film badge will reduce

exposure to such a degree that occasional blood examinations can eventually be substituted for those now done twice a month.

Summary

A film badge that measures the quantity and quality of scattered radiation is described.

Physical studies show that scattered radiation in the kilovoltage range between 50 and 140 has a "harder" quality than the direct beam that produces it.

The significance and the importance of these physical data to the roentgenologist are discussed.

A radiation monitoring program is outlined, and some early results are commented upon.

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INFARCTION OF THE INTERVENTRICULAR SEPTUM*

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THE electrocardiographic findings resulting from infarction of the interventricular septum were recently described by Roesler and Dressler.‡ These investigators found that when the septum was involved so extensively as to include segments of both the anterior and posterior myocardial walls a characteristic electrocardiogram was regularly obtained. This consisted of a posterior-myocardial-infarction pattern in the standard limb leads and an anteroseptal picture in the leads from the precordium. Interest in this condition led to a review of clinical and pathological material at the Veterans Administration Hospital in West Roxbury, Massachusetts.

Over a period of twenty-seven months, from May, 1946, to August, 1948, there were 100 cases of acute cardiac accidents due to coronary-artery disease. This group includes acute coronary thrombosis with and without myocardial infarction, myocardial infarction without demonstrable acute coronary occlusion and cases of atypical complaints and findings in which autopsy demonstrated recent myocardial infarction. There were 25 deaths. Autopsies were performed in 20 cases. Of the anatomically examined group extensive infarction of the interventricular septum was observed in 11. Without exception there was considerable coincident involvement of the anterior or posterior walls of the left ventricle or both. The papillary muscles were often infarcted.

The pertinent data in this group of 11 patients with infarction of the interventricular septum are summarized in Table 1.

There were no women in this series because admissions at the West Roxbury Hospital are limited to men. The ages varied from forty-seven to eighty, with a mean of sixty-one and three-tenths years. History or physical findings of previous myocardial infarction, or both, were present in 6 patients; 2 of these also had angina pectoris. Angina pectoris without a history of myocardial infarction was present in 4 cases. One patient who had neither angina nor myocardial infarction had previously been studied for chronic pulmonary disease during which time there were no cardiac complaints or electrocardiographic abnormalities. One patient had evidence of a gastric neoplasm and severe anemia. In all but 1 patient there was clinical evidence of severe myocardial disease on admission. There were signs of right-sided heart failure in 6, left-sided failure in 7, gallop rhythm in 3, embryocardia in 3 and extremely low blood pressure in 2 cases.

Two of the patients had white-cell counts of over 20,000 (24,000 and 24,500). There were no other

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‡Roesler, H., and Dressler, W. Electrocardiographic pattern of infarction of interventricular septum, extending from anterior to posterior aspect of heart. *Am. Heart J.* **34**:817-826, 1947.

striking elevations of the white-cell count or erythrocyte sedimentation rates and no temperatures above 102°F.

The clinical courses varied. With 2 exceptions the patients were desperately ill throughout much of their hospital courses. Two of these, however, had improved considerably and were expected to recover. These and 2 who at no time appeared dangerously ill were among 5 patients who died suddenly and unexpectedly.

Auricular fibrillation was observed in 2 patients, appearing as a transient phenomenon in 1. Complete auriculoventricular block was seen in 2 cases. In 1 of these the blood pressure dropped to shock levels during the period of bradycardia. When the block had cleared and the pulse increased the blood pressure promptly resumed its former levels.

All the 11 cases anatomically examined had coronary-artery sclerosis (Fig. 1). In 2, however, there was no evidence of recent coronary occlusion. One with cancer of the stomach and severe anemia had only moderate sclerosis and narrowing, which was largely confined to the left anterior descending artery. Six showed fresh occlusions of the left anterior descending coronary artery; of these, 3 had associated involvement of the left circumflex branch, and 3 had older involvement of the right coronary artery. Three patients had fresh thrombosis of the

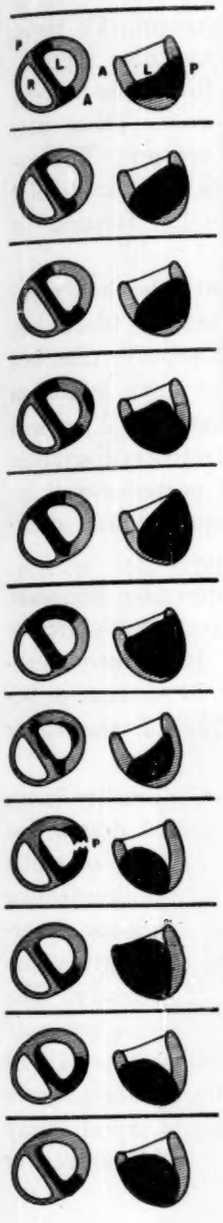
TABLE 1. *Data in 11 Cases of Infarction of the Interventricular Septum.*

Case No.	Age	Pertinent History	Physical Findings	Significant Laboratory Findings	Course of Illness
	yr.				
1	57	Angina and hypertension for 1 yr.; ankle edema for 5 days; pain 4 hr. before entry.	Cardiac enlargement, basal rales and ankle edema; blood pressure of 150/90.	Abnormal urine; hemoglobin of 8.7 gm.; sedimentation rate of 38 mm. per hr.; white-cell count of 10,300.	Persistent angina with little or no effort; episodes of left failure; patient died suddenly and unexpectedly.
2	53	Angina for 15 yr.; dyspnea and edema for 3 yr.; persistent pain for 12 hr.	Cardiac enlargement; pitting edema.	White-cell count of 19,600; sedimentation rate of 49 mm. per hr.	Pain returned on 6th day; angina on little or no effort; patient died suddenly and unexpectedly on 60th day.
3	60	Hypertension and aortic stenosis for 7 yr.; angina, dyspnea and edema for 2 yr.; persistent pain for 2 days.	Venous distention; enlarged heart, gallop rhythm, aortic murmur, rales and edema.	White-cell count of 24,000; hemoglobin of 8 gm.; blood sugar of 207 mg. per 100 cc.	Persistent retrosternal pain; blood pressure of 90/80; return of pain 2 hr. before death on the 6th day.
4	57	Coronary thrombosis 7 yr. earlier; hypertension; persistent pain for 13 hr.	Cardiac enlargement; slight cyanosis; embryocardia; gallop rhythm.	White-cell count of 17,500; abnormal urine.	Friction rub on 2nd day; bundle-branch block and then auriculoventricular dissociation with blood pressure of 90/70; temperature elevated to 102°F.; patient died on 2nd hospital day.
5	53	Heart attack 1 yr. before; angina for 6 wk.; persistent pain for 12 hr.	Cardiac enlargement; embryocardia; basal rales; blood pressure 74/48.	White-cell count of 24,000; sedimentation rate of 48 mm. per hr.	Temperature elevated to 102°F.; severe chest pain recurred on 14th day; patient apparently recovering when he died suddenly on 18th hospital day.
6		Gastric cancer; angina pectoris and ankle edema for 4 mo.	Gallop rhythm; systolic basal murmur; blood pressure of 110/50; abdominal mass.	Hemoglobin of 4.3 gm.; red-cell count of 1,500,000.	Persistent angina decubitus; slight improvement with transfusion; gradual downhill course.
7	47	Acute coronary incidents on 3 occasions; angina and dyspnea for 4 yr.; recent total incapacity.	Marked venous engorgement; cardiac enlargement; basal rales; pedal edema.	Laboratory evidence of cirrhosis of liver	Repeated pulmonary embolism and infarction in spite of low prothrombin values; death after venous ligation.
8	70	Hypertension; cardiovascular accident 2 yr. before; marked dyspnea for 4 days; crushing pain for 2 days.	Venous distention; cardiac enlargement; pulmonary edema; cyanosis; friction rub.	White-cell count of 14,000; sedimentation rate of 36 mm. per hr.; abnormal urine.	Transient auricular fibrillation; thrombophlebitis; patient died suddenly of cardiac rupture.
9	80	Hypertensive heart disease; leg amputation for arteriosclerosis; pain for 12 hr.	Cardiac enlargement; duplicated heart sounds; aortic systolic and diastolic murmurs.	White-cell count of 10,200; sedimentation rate of 34 mm. per hr.	Apparently good progress for 2 wk.; one episode of transient collapse; patient died suddenly on 14th day while talking.
10	56	Angina for 1 yr.; congestive failure on 3 occasions; striking acute dyspnea for 24 hr.	Cardiac enlargement; cyanosis and venous and hepatic engorgement; edema; blood pressure of 100/76.	—	Thrombophlebitis and pulmonary infarctions; no response to therapy; gradual down-hill course.
11	60	Chronic pulmonary fibrosis; tearing precordial pain on and off for 4 days.	Heart sounds distant; basal rales; blood pressure of 110/80.	White-cell count of 16,800; sedimentation rate of 36 mm. per hr.; abnormal urine; nonprotein nitrogen of 55 mg. per 100 cc.	Bundle-branch block followed by 3° auriculoventricular block with resultant drop in blood pressure to 50/40; patient apparently recovering when he died suddenly on 9th hospital day.

right coronary artery, and in each case older disease of the left anterior descending artery was present.

The right ventricular side of the septum showed infarction in 3 of 11 cases studied and then only together with more extensive disease of the left side. In most cases from a third to a half (generally a half) of the septal thickness was involved on the left ventricular side. It is of interest that patients who had the electrocardiographic picture of *right*-bundle-branch block demonstrated only left septal disease at autopsy. There were no septal perforations.

The electrocardiographic pattern described by Roesler and Dressler was observed in 4 of the 11 patients; in 1 there was coincident right-bundle-branch block. In 2 the electrocardiogram was that of uncomplicated posterior myocardial infarction (Fig. 2 and 3). Curiously, these were the only 2 deaths among 25 patients with the pattern of acute posterior infarction. Frank bundle-branch block was seen in 6 cases — 4 left and 2 right. Perhaps fortuitously, both patients with right-bundle-branch block also showed 3° auriculoventricular block, possibly as the result of bilateral bundle involve-



Case No.	Extent of Myocardial Infarction	Coronary Vessels Involved	Electrocardiographic Findings
1	Lower third of left half of interventricular septum, with contiguous segments of anterior and posterior walls to epicardial surfaces	Acute occlusion, right coronary artery; older occlusion, left anterior descending artery.	Posterior-infarction pattern in limb leads; anteroseptal in precordial leads; QRS complex 0.12 sec.
2	Lower half of left half of interventricular septum, with contiguous segments anterior and posterior left ventricular walls to epicardial surfaces	Acute occlusion, right coronary artery; older occlusion, left anterior descending artery	Posterior-infarction pattern in limb leads; anteroseptal in precordial leads; QRS complex 0.12 sec.
3	Lower half of left half of interventricular septum, with contiguous segments anterior and posterior left ventricular walls to epicardial surfaces	Extensive coronary sclerosis but no new or complete occlusion	Posterior-infarction pattern in limb leads; anteroseptal in precordial leads; QRS complex 0.12 sec.
4	Lower two thirds of left half of interventricular septum, with large contiguous segments anterior and posterior left ventricular walls to epicardial surfaces; small isolated infarction, left lateral wall.	Acute occlusion, left anterior descending artery; older occlusion, right coronary and left circumflex arteries.	Electrocardiographic pattern as above, followed by right-bundle-branch block and later 3° auriculoventricular block
5	Lower posterior two thirds entire thickness of interventricular septum, with large segment posterior left ventricular wall; extending to but not including anterior myocardial wall.	Acute occlusion, right coronary artery; older occlusion, left anterior descending artery.	Pattern of posterior myocardial infarction; QRS complex 0.09 sec.
6	Lower posterior three fourths entire thickness of interventricular septum with large contiguous segments of posterior left ventricular wall; extending to but not including anterior myocardial wall.	Minimal coronary sclerosis; no coronary occlusion.	Pattern of posterior myocardial infarction; QRS complex 0.09 sec.
7	Patchy infarction, lower half of left third of interventricular septum extending to anterior epicardial surface at apex; large area of subendocardial infarction, lateral wall.	Acute occlusion, left anterior descending artery to left circumflex artery; old occlusion, right coronary artery.	Left-bundle-branch block
8	Anterior lower half of left half of interventricular septum, not including posterior left ventricular wall; entire contiguous anterior and lateral left ventricular wall, with perforation laterally.	Acute occlusion, left anterior descending and left circumflex arteries	Left-bundle-branch block; auricular fibrillation.
9	Almost entire left half on interventricular septum and adjacent large segment of anterior wall of left ventricle; no posterior involvement.	Acute occlusion, left anterior descending artery; old occlusion, right coronary artery.	Left-bundle-branch block
10	Lower anterior half of left two thirds of interventricular septum, with local extension to right endocardial surface; large adjacent segment of anterior left ventricular wall.	Acute occlusion, left anterior descending artery; older occlusion, left circumflex artery.	Left-bundle-branch block; auricular fibrillation.
11	Lower anterior two thirds of left half of interventricular septum, with large adjacent segment of anterior myocardial wall to epicardial surface; no posterior-wall disease.	Acute occlusion, left anterior descending artery; marked narrowing, right coronary artery.	Right-bundle-branch block; 3° auriculoventricular block.

Figure 1. *Electrocardiographic Findings, Vessels Involved and Extent of Myocardial Involvement in 11 Cases of Infarcted Interventricular Septum.*

ment (Fig. 4 and 5). In the 3 cases exhibiting the pattern of Roesler and Dressler without classic bundle-branch block, the QRS duration was 0.12 second. Only the patients who during life showed the pattern of posterior infarction had QRS complexes of 0.10 second or less.

Discussion

From the data obtained in 11 fatal cases of myocardial infarction showing extensive involvement of the interventricular septum, it appears likely that the most frequent electrocardiographic phenomenon in addition to or aside from patterns of specific infarction is that of impaired interventricular conduction or frank bundle-branch block. Less commonly, the Roesler and Dressler pattern is noted, and still less frequently the picture of uncomplicated myocardial infarction. In this series the pattern of simple infarction was always that of the posterior wall — no infarction of the anterior myocardial wall was seen. Patients who anatomically had extensive involvement of the anterior wall together with septal disease invariably showed bundle-branch block. Auriculoventricular dissociation, a condition rarely seen in myocardial infarction, was encountered twice in this group.

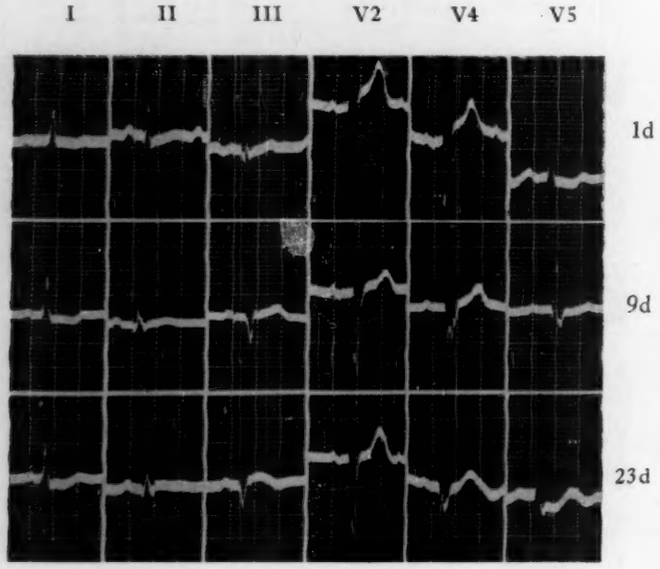


Figure 2. *Electrocardiograms Obtained in Case* 1. *There is evidence of posterior myocardial infarction in the limb leads and of anteroseptal infarction in the precordial leads. (The Roesler and Dressler pattern.)*

If one can accept these findings as criteria of interventricular-septum infarction (clinical or electrocardiographic evidence of infarction with bundle-branch block, the Roesler and Dressler pattern), the diagnosis might have been made in a total of 15 patients out of the original group of 100. There were 11 cases of myocardial infarction with bundle-branch block and 5 cases with the Roesler and Dressler pattern. One patient had both. Of those with bundle-branch block 3 recovered, and 7 of the 8 who died were examined post mortem. Of these 6 had infarction of the interventricular septum, and 1 did not. Of 5 patients exhibiting the pattern of Roesler and Dressler, 1 recovered. Those who died all had involvement of the septum. The patient who had bundle-branch block and the Roesler and Dressler pattern had septal infarction at autopsy.

It is apparent from the patient who had myocardial infarction with bundle-branch block but no anatomic involvement of the septum that not all persons exhibiting this picture have infarction of the septum. Similarly, as indicated by 2 patients who had septal infarction with electrocardiographic manifestations of uncomplicated posterior-wall involvement, infarction of the septum may occur without specific diagnostic evidence.

It is therefore impossible to determine the exact incidence or mortality of extensive infarction of the interventricular septum. It is likely, however, that the mortality is about 70 per cent or between two and three times that of the entire group.

It is not clear whether the high mortality is the result merely of extensive myocardial destruction or whether it is a special manifestation of septal disease. There is some evidence that the interference with conduction and the related tendency to arrhythmias noted in infarction of the septum materially diminished the chances of recovery. The large incidence of septal infarction in this group of fatal cases is also difficult to assess. It may be related to the demonstrated high mortality in septal diseases. On the other hand, septal injury frequently occurs in patients with widespread or fatal coronary-artery disease.

Summary

Out of a group of 100 cases of acute coronary-artery disease 25 patients died, and 20 were examined post mortem. Of these 11 demonstrated extensive infarction of the interventricular septum.

The mortality of septal infarction could not be accurately determined but is considered to be approximately 70 per cent.

When both anterior and posterior myocardial walls were involved together with the septum, the encountered more frequently. One of the patients showed the Roesler and Dressler pattern together with right-bundle-branch block. Complete auriculoventricular block occurred in 2 patients who had previously shown right-bundle-branch block. The pattern of simple posterior myocardial infarction was found in 2 patients who had extensive involvement of the septum.

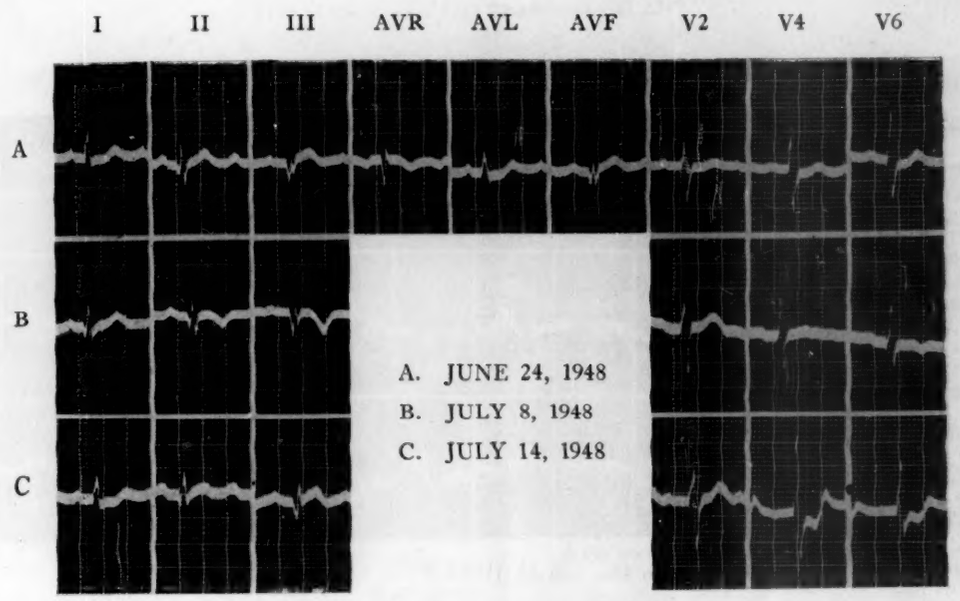


FIGURE 3. *Electrocardiograms in Case 6.*
The findings are those of uncomplicated posterior myocardial infarction.

Roesler and Dressler electrocardiographic pattern was observed. However, bundle-branch block was

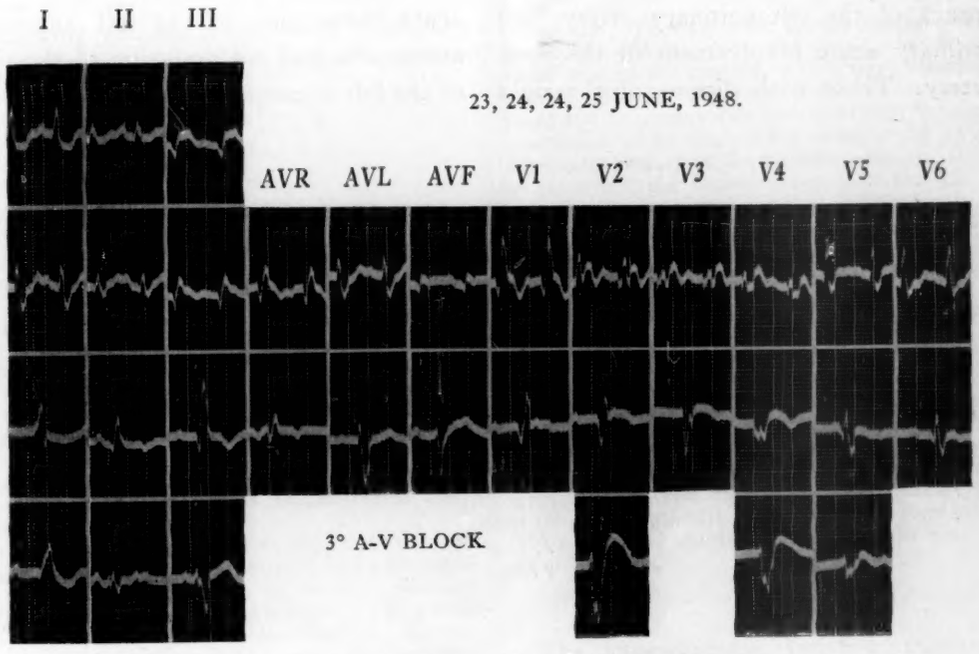
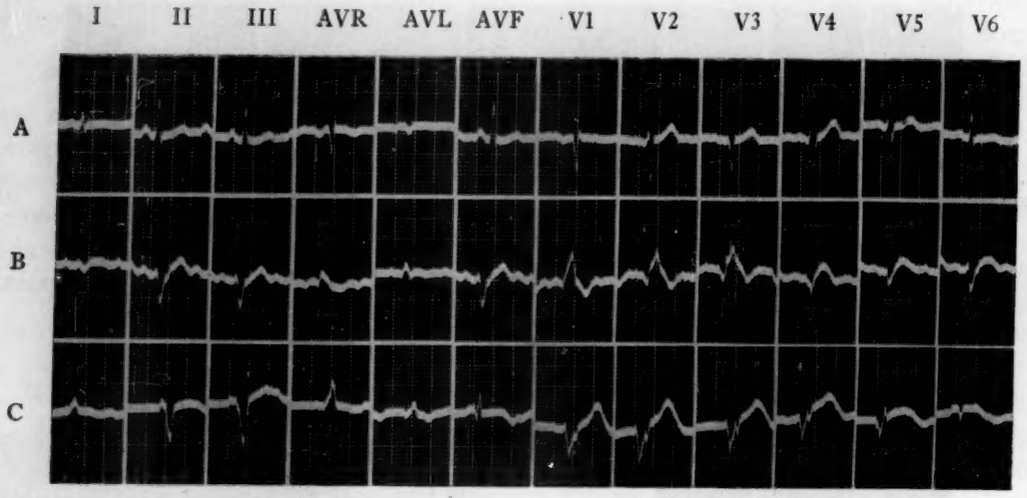


FIGURE 4. *Electrocardiograms in Case 4.*
Note the simultaneous appearance of right-bundle-branch block and the Roesler and Dressler pattern in the second tracing. This altered somewhat in the electrocardiogram obtained later the same day. The last tracing was made on the day of death when 3° auriculoventricular block was present. The interventricular block apparently changed from right to left-bundle-branch block. This was interpreted as evidence that the idioventricular rhythm, which occurred during auriculoventricular dissociation, originated on the right side below the original area of block.

Two patients had no acute coronary occlusion. Six had acute thrombosis of the left anterior descending branch of the left coronary artery, and 3 showed primary acute involvement of the right coronary artery. Those with disease of the right coronary artery had older changes in the left anterior descending artery. Similarly, patients with acute thrombosis of the left anterior descending artery also had old occlusion of the right coronary or the left circumflex artery.



A, 29 APR. 48. B, 14 JUNE 48. C, 14 JUNE 48.

FIGURE 5. *Electrocardiograms in Case 11.*

The first tracing was obtained during an earlier hospitalization. The second electrocardiogram, made during the first day of the last illness, showed evidence of right-bundle-branch block and anterior myocardial infarction. In the last tracing there was an apparent change from right to left-bundle-branch block during a period of 3° auriculoventricular block and dissociation.

FATAL JARISH–HERXHEIMER REACTION WITH SUDDEN ANEURYSMAL DILATATION AND COMPLETE BRONCHIAL OCCLUSION FOLLOWING PENICILLIN THERAPY*

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IN 1895 Jarish[1] observed after treatment with mercury an accentuation of the syphilitic roseola, and in 1902 Herxheimer[2] described a reaction of the various syphilitic manifestations following the use of mercury. He suggested a hypersusceptibility of the treponemes to mercury and believed that the reaction was caused by endotoxins liberated upon death of the spirochetes.

The demonstration by Mahoney, Arnold and Harris[3] and others that syphilitic lesions undergo rapid involution under penicillin therapy suggested the use of this drug in the treatment of cardiovascular syphilis. Various reports of therapeutic shock following the use of penicillin in late syphilis have appeared in the literature,[4-6] and for this reason there has been considerable hesitancy on the part of cardiologists regarding its use. This uncertainty has not been shared by most syphilologists.[7-10]

In general, reactions to penicillin have been fewer and milder than those with any other form of treatment for syphilis to date. Nevertheless, as with any newly introduced drug, an increasing number and variety of side reactions are observed.[11-17] A fatal case following sudden aneurysmal dilatation with complete bronchial occlusion and massive collapse of the lung is presented.

CASE REPORT

J. J. (A.H.85142), a 75-year-old, married Negro, was admitted to the Albany Hospital by ambulance on January 7, 1949, with a chief complaint of weakness and cough of 1 week's duration. The patient had enjoyed excellent health most of his life except for gonorrhea as a youth. He had worked as a tobacco auctioneer for a number of years and had subsequently worked as a janitor. There was no history of syphilis. The family history was noncontributory. The present illness had begun with coryza, followed by a cough productive of small amounts of mucoid sputum and some elevation of temperature. He was seen by a physician, who advised hospitalization.

The temperature was 102.2°F., the pulse 130, and the respirations 36. The blood pressure was 140/80 (right arm), 135/78 (left arm).

Physical examination showed a well developed but poorly nourished man who did not appear acutely ill, but was coughing frequently. External examination of the eyes was not remarkable; there was no Horner's syndrome. The pupils were equal and reacted to light and accommodation. He was edentulous, and hearing was diminished. There was increased anteroposterior diameter of the chest, with widened interspaces, and an area of dullness on the right over the fourth and fifth ribs. Bronchovesicular breath sounds and fine crepitant rales were heard in this area. The left lung was clear. Except for tachycardia examination of the heart was within normal limits. The remainder of the physical and neurologic examination was noncontributory.

The urine was normal. Examination of the blood demonstrated a red-cell count of 4,800,000, with a hemoglobin of 13 gm., and a white-cell count of 19,400, with 85 per cent neutrophils. Blood for a Wassermann test was drawn. The fasting blood sugar was 84 mg. and the nonprotein nitrogen 36 mg. per 100 cc. Blood culture was negative, but subsequently *Streptococcus viridans* was isolated from the sputum. Roentgenograms of the chest showed an area of consolidation in the lower peripheral portion of the right upper lobe consistent with pneumonia. The aorta appeared to be enlarged to the left, and there were areas of calcification within it, which suggested the possibility of an aneurysm. The electrocardiogram showed left-axis deviation and evidence of myocardial damage.

The patient was given fluids intravenously on admission and 100,000 units of aqueous penicillin every 3 hours; on the following morning the temperature was normal. On the 3rd hospital day, he complained of dyspnea, and on physical examination the trachea was deviated to the left, with absent breath sounds anteriorly and posteriorly on the left side. Another roentgenogram showed some resolution of the previously described area of increased density in the middle right-lung field. Areas of increased density had developed throughout the entire left-lung field, with narrowing of the interspaces and shifting of the mediastinum to the left consistent with atelectasis. The report on the blood Wassermann reaction was ++++. The clinical impression was that the patient had a syphilitic aneurysm and that a Jarish–Herxheimer reaction had occurred after the penicillin therapy of pneumonia, with sudden dilatation and complete occlusion of the left main bronchus and massive collapse of the left lung.

On the following day bronchoscopic examination disclosed, about 5 cm. above the carina, a large bulge in the posterior wall of the trachea, which was pulsating in a marked fashion. The bronchoscope could be introduced beyond this point and the carina was then identified, but the left bronchus was found to be completely occluded by an extrabronchial mass intruding upon the bronchial lumen. It was impossible to introduce the bronchoscope into the left bronchus, the right being completely normal. Subsequently a titer of 120 was obtained in the complement-fixation test for syphilis, and a spinal-fluid Wassermann test was ++++.

The patient went progressively down hill, with a daily temperature elevation to 103°F., and died on the 58th hospital day with no essential change in the previously described physical findings.

Autopsy showed collapse of the left lung. The heart was not unusual, weighing 280 gm. There was a large saccular aneurysm of the arch and descending aorta, which measured about 10 cm. in diameter. The aneurysm, which was occluding the left main bronchus and compressing the lower 4 or 5 cm. of the trachea, was thin walled and contained a large rubbery clot that was loosely adherent. The bodies of the fourth and fifth dorsal vertebras were eroded to a depth of 2.5 cm., and the intervertebral disks between them were normal.

DISCUSSION

The unpredictable Jarish–Herxheimer reaction, or so-called therapeutic shock, occurs after the first injection of an antisyphilitic drug. There is a local response at the injection site, a general response of fever and malaise and a focal exacerbation of symptoms. The focal response is the one of concern and principally so in tertiary syphilis, for its occurrence in over 50 per cent of patients with early syphilis treated with penicillin is not of conse-

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quence.[11, 16] In late syphilis it may cause a fatal reaction as in the case described above. In cardiovascular syphilis the edema and swelling of the syphilitic involvement about the coronary ostia may result in sudden closure of a coronary artery, or an aortic aneurysm may rupture. In laryngeal syphilis a gumma may swell and cause asphyxia. The reaction is thought to be the result of the sudden death of a large number of spirochetes, with the subsequent release of proteins and toxins from the treponemes. It has also been observed to occur since the introduction of penicillin into antisyphilitic therapy.

Moore,[7] in 1947, using penicillin in 50 cases of cardiovascular syphilis with aortic aneurysm or aortic insufficiency, divided them into two groups. One was initially treated with 1000 units gradually increased to average therapeutic dosage, and the other with 50,000 to 100,000 units from the start. In neither group did any untoward reactions or damage occur as detectable by sedimentation rates, temperature, white-cell count and so forth. Moore concluded that the Herxheimer reaction need not be greatly feared. There is no proof, however, that antisyphilitic therapy heals cardiovascular lesions even though it heals visible and palpable visceral lesions. Untoward reactions are observed, as in the case described above, in which penicillin was given for pneumonia before it was discovered that the patient had syphilis. There were no clues in the history or physical examination until the serologic report returned several days later.

Summary

The Jarish–Herxheimer reaction in cardiovascular syphilis is described.

An unusual fatal case, in which sudden aneurysmal dilatation, with complete bronchial occlusion and massive lung collapse, followed penicillin therapy for pneumonia, is reported.

The suggestion is made that some caution be exercised in the penicillin treatment of elderly patients for conditions other than syphilis.

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ACUTE APPENDICITIS WITH CONCOMITANT SITUS INVERSUS

Report of a Case

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SITUS inversus viscerum is uncommon, only 200 cases having been catalogued up to 1912 by Karashima.[1] By 1925, approximately 160 more cases had appeared in the literature,[2] and in 1938 Larson[3] estimated that over 475 cases had been reported. Adams and Churchill[4] stated that situs inversus had occurred in 23 cases out of 237,112 admissions to the Massachusetts General Hospital. Sherk[5] observed this condition in 10 cases among 347,000 hospital admissions. Willis[6] reported 3 cases in 10,000 hospital admissions. LeWald[7] recorded 29 cases in 40,000, and Francisco and Ongpin[8] 36 cases in 126,000 x-ray studies. Guenther[9] reported 3 cases in 22,000 autopsies, LeWald[7] 1 case in 50,000 autopsies, and Francisco and Ongpin[8] 4 cases in 10,000 autopsies. Over a forty-year period, approximately 10,000 cadavers were dissected at Columbia University College of Physicians and Surgeons, with but 1 case being discovered.[2]

Most writers on this subject believe that the transposed organs develop normally and that their anatomically abnormal site has no ill effect upon their usual function or upon the patient's well-being. Situs inversus appears to be twice as common in males as in females, and total transposition of the organs is far more common than partial inversion.[10-14]

HISTORICAL

Perhaps the earliest known record of situs inversus viscerum dates from the time of Aristotle, who noted transposition of organs in 2 animals.[1, 12-14] Beck[15] reports that the first recorded case in man occurred in the person of Marie de Medici, Queen of France. In 1824 the use of auscultation and percussion as diagnostic aids was first discussed by Küchenmeister.[16] Vehsemeyer,[12] in 1897, was able to demonstrate this condition by means of the roentgen ray. Pol,[13] in reviewing the literature in 1935, found 46 cases of left-sided appendicitis associated with situs inversus. Blegen,[17] in 1949, records 144 cases of situs inversus, with 158 operations. He found that a diagnosis of situs inversus was made before operation in only 39 cases in which the patient was operated upon for appendicitis.

EMBRYOLOGY

Situs inversus viscerum should not be confused with failure of rotation or malrotation. In malrotation the viscera occupy their usual anatomic position, the abnormality occurring in the midgut. The midgut occupies the umbilical cord up to about the tenth week of intrauterine life, when the coils of gut return to the abdomen, which has grown large enough to accommodate them. Under normal conditions the proximal jejunum leaves the cord first, passing from right to left in a counterclockwise direction, using the superior mesenteric artery as its axis. These coils are packed more and more to the left by the following loops of intestine until the cecum and ascending colon, which are the last to enter, lie in the right hypochondrium. If, however, the coils of gut return to the abdomen en masse, retaining the position occupied in the cord, the entire large intestine will be on the left side with the small intestine on the right and the terminal ileum entering the cecum from right to left. This condition is known as failure of rotation. When there has been partial rotation, the coils lying between nonrotation and their normal position, the anomaly is referred to as malrotation.[1-4, 6, 8-19] Many theories have been advanced in an attempt to explain the cause of situs inversus, but as yet no satisfactory, acceptable hypothesis has been advanced.

Karewski[20] divides the cases into congenital and acquired, and the causes into total transposition of the viscera, failure of descent of cecum, excessive length of normally located appendix and mobile cecum with adhesions binding it to the left side.

DIAGNOSIS

Situs inversus, per se, is usually diagnosed during routine physical examination and confirmed by appropriate x-ray studies or is discovered accidentally at operation. The diagnosis of appendicitis rests upon a fairly regular chain of clinical symptoms and physical signs that do not need to be discussed. The diagnosis of "left-sided" appendicitis should be suspected when there are a history of epigastric or periumbilical pain followed by nausea or vomiting, clinical finding of dextrocardia, tenderness in either lower quadrant and reversal of the stomach shown by barium swallow.

CASE REPORT

S. S. (B. H. 20503-48), a 14-year-old Italian boy, entered the hospital with the complaint of periumbilical pain. On the morning before his admission to the hospital he had experienced dull periumbilical pain, which remained constant and did not radiate. He spent the day in bed and later that evening became nauseated and vomited several times. He had been anorexic since the onset of his illness. He had

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had one normal bowel movement on the day of admission. He had not received any cathartic or enema. He had no urinary or respiratory symptoms. He entered the hospital approximately 28 hours after onset of symptoms.

The past history revealed that the patient had been attending the cardiac outpatient department for many years because of "reversed heart." This had not in any way limited his physical activities.

Physical examination revealed a well developed but undernourished boy who appeared acutely ill. He seemed to be more comfortable with his thighs flexed on his trunk. His skin was hot and dry, with no rash or petechiae. Positive findings were confined to the chest and abdomen. The point of maximum cardiac impulse was in the fifth interspace 8 cm. to right of the midsternal line. Regular sinus rhythm, with sounds of good quality, was heard. The abdomen was flat and muscular, with no rigidity or spasm. There were marked tenderness and direct rebound tenderness in the left lower quadrant, but none in the right lower quadrant. There was no abdominal scar or masses. Rectal examination revealed no tenderness on the right and marked tenderness on the left.

The temperature was 103.2°F. by rectum, the pulse 100, and the respirations 20. The blood pressure was 110/70.

Urinalysis was negative. Examination of the blood disclosed a white-cell count of 13,750, with 82 per cent neutrophils. A chest plate revealed dextrocardia. A barium swallow showed a situs inversus of the stomach. A preoperative diagnosis of situs inversus viscerum with acute appendicitis was made, and after restoration of fluid and electrolyte balance the patient was taken to the operating room. The abdomen was entered through a left McBurney incision, and an acutely inflamed appendix was removed. Exploration revealed marked mesenteric adenitis; ileum entering the cecum from right to left; and a left-sided liver. The patient was up and about on the morning after operation and was discharged on the 7th day completely asymptomatic.

Summary

Situs inversus is uncommon. A review of the literature with some statistics pertaining to the condition is given.

The embryology of nonrotation and malrotation is discussed.

Aids in the diagnosis of situs inversus complicated by appendicitis are briefly listed.

This condition should be considered in the differential diagnosis whenever a patient complains of left-sided pain.

A report of a case is given in detail.

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MEDICAL PROGRESS

ACTIVE IMMUNIZATION (Concluded)

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TETANUS

Effectiveness of Toxoid

The results of tetanus-toxoid immunization in the United States Army in World War II have been presented in illuminating detail by Long and Sartwell,[310] whose paper has been abstracted *in extenso* in the *Journal*.[311] Long[8] has also presented a brief summary of this material. The remarkable results obtained in the United States Army have been so well publicized that it will suffice to present here only the essential facts. The procedure employed was to administer three doses of 1 cc. each, at intervals of three to four weeks, followed by a single stimulating dose of 1 cc. at the end of the first year, and an emergency booster dose upon the occurrence of a wound or other injury that might result in tetanus. During the early part of the war, booster doses were also given to personnel departing for a theater of operations, unless such a dose had been administered within the preceding six months; this practice was later eliminated. All told, 12 cases of tetanus occurred in the Army during World War II, in only 4 of which the patients had received a full primary immunizing course as well as a booster dose of toxoid. The tetanus rate per 100,000 wounded and injured was 0.44 if all cases are considered and 0.22 if cases with no active immunization are excluded. These rates may be compared with those of other periods in the United States Army: for World War I, 13.4 per 100,000; and from 1920 to 1941 inclusive, 2.4 per 100,000. By contrast, the reported incidence in the Japanese Army and Navy from 1940 through 1944 was about 10 cases per 100,000 wounded. Abundant additional evidence is cited by Long and Sartwell, to substantiate the extraordinary prophylactic effectiveness of tetanus toxoid properly administered.†

A recent review and study by Press[313] has analyzed the arguments for and against the routine use of tetanus toxoid. He cites old and new data that re-emphasize the danger of contracting tetanus from trivial or unrecognized injuries. He has collected 100 clinical cases of tetanus that, when added to numerous previous reports, make a total of 982 cases in which the degree of the infecting injury was defined. Fifteen per cent of all these cases arose from "trivial injury." Three hundred and fifty-one of the entire group could be analyzed for the presence or absence of *any* known injury; 34.5 per cent were recorded as "injury unknown." These observations lend further support to the routine use of toxoid, since the residual immunity left by periodic inoculations of toxoid should afford tangible protection even against unrecognized infection.

Limitations of Effectiveness

The duration of this residual immunity and the degree and rapidity of response to a booster dose have yet to be sufficiently defined. McBryde and Poston[314] measured the persistence of antitoxin in Negro children at various intervals after administration of two doses of alum-precipitated toxoid, given two and a half months apart. Their data may be analyzed according to a generally accepted (but probably conservative) standard of protection: the presence of at least 0.1 unit of antitoxin per cubic centimeter of serum. By this standard, the following numbers of children were still protected at the indicated interval after primary inoculation: after one year; 30 out of 33; after two and a half years, 13 out of 29; and after five years, 2 out of 15.

McBryde and Poston then measured the response to booster doses of varying size, and found that at one week after a stimulating dose given at either two and a half or five years subsequent to primary immunization, a tenfold to eight-hundred-fold rise in antitoxin titers was obtained. The degree of response varied according to the size of the stimulating dose employed, but not in a simple linear proportion. For example, in the group injected two and a half years after primary inoculation, 1 cc. produced an average titer of 7 units, 0.1 cc. produced 3 units, and 0.004 cc. produced 0.3 unit. The results after a five-year interval were closely similar.

Comparable findings in a larger group of subjects have been reported by Wishart and Jackson.[315] They observed a sevenfold geometric mean rise in titer four weeks after a subcutaneous booster dose of 0.1 cc., and a thirty-two-fold rise after 1.0 cc. of toxoid. Since 1 out of 67 subjects failed to reach a "protective" titer after receiving 0.1 cc., whereas all of 55 subjects reached or exceeded such

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†Results with alum-precipitated toxoid in the United States Navy were comparable, only 2 cases of tetanus in definitely immunized personnel having occurred among 89,998 wounded in this service.[312]

titers after receiving 1.0 cc., the authors suggest that the smaller dose is inadequate as a routine booster. It should be noted here that McBryde and Poston found that 0.1 cc., given intradermally five years after initial immunization, produced a response at least as good as that obtained with 1.0 cc. subcutaneously. This supports the frequent observation of other workers with various antigens[11, 145, 146] that a stimulating dose is highly effective when administered by the intradermal route.

Long and Sartwell[310] likewise demonstrated the long persistence both of antitoxin levels and of the capacity to respond rapidly and adequately to a booster dose. Of 8 subjects tested four or five years after primary injections, all possessed 0.01 unit per cubic centimeter or more; 2 had titers of 1.0 to 5.0 units. One week after injection of the stimulating dose, 7 were tested again, and all were above 0.5 unit, 4 having titers of 5 to 20 units.

Thus, it appears to be fairly well established that detectable — and as a rule significantly high — titers of antitoxin persist for at least four or five years after primary immunization, and that a striking increase in titer will appear within a week of a booster injection. But cases of tetanus sometimes reach a fatal outcome in less than a week, so that the question arises, How soon will the titer begin to rise after injection of an emergency booster dose? Gold[316] has reported titrations on the fourth to the seventh day inclusive after booster doses in from 8 to 20 subjects. The first hint of a response was seen (in 1 subject out of 8) on the fourth day. A recent observation on 5 subjects titrated from the fourth to the tenth day inclusive[317] confirms these findings, and suggests that the response is at or near its maximum by the tenth day. Miller and his associates[318] have followed the initial response to a booster dose in about 100 subjects, finding that the best sequence (basic immunization with adsorbed toxoid, booster with fluid) induces a rise in most subjects by the fourth day and in all by the fifth day. Thus, it appears that in the presence of a low antitoxin titer a booster dose given immediately after injury may not always induce a response with sufficient speed to combat a fulminating tetanus infection, such as can occur when contaminated material is driven directly into the central nervous system. One is led therefore to the conclusion that optimum protection against tetanus may best be achieved by application of the following principles: adequate primary immunization; administration of periodic maintenance doses of toxoid, perhaps at intervals of approximately 4 years; administration of a booster dose after such injuries as may result in tetanus; and consideration of the prophylactic administration of antitoxin if such an injury has occurred within the meninges. A good description of a well planned and well organized industrial program of antitetanus immunization[319] and an excellent summary of the principles and applications of reimmunization with tetanus toxoid[320] have recently appeared and will be helpful to any physician planning the use of toxoid in individual patients or in groups.

Reactions

Wishart and Jackson[315] report the occurrence of severe local reactions in 4.7 per cent of their subjects receiving 1.0 cc. as a booster dose. Although this frequency is not serious, they believe that it deserves to be reduced if possible, and state that preliminary trials have shown that refinement of the antigen may largely circumvent this problem. Pillemer and his associates[321, 322] have succeeded in preparing tetanus toxoid in a highly purified and concentrated form. This preparation has been sufficiently freed of anaphylactogenic constituents of the culture medium so that it will not cause shock in guinea pigs sensitized to the medium, the crude toxoid causing severe or fatal anaphylaxis in similarly sensitized animals. The method of purification is based upon precipitation of the toxoid substance with methyl alcohol in the cold, as has also been done by Pillemer with diphtheria toxoid.[87, 88] The successful application of such methods may make possible the distribution of toxoids that contain only the essential immunizing substance and perhaps also a stabilizing nonantigenic diluent, which will eliminate the risk of reactions to extraneous substances. The achievement of this objective may be hastened as a result of the series of studies by Mueller and his associates,[323-325] which are directed toward the production of tetanus toxin in a medium consisting only of known chemical substances. Even when this is accomplished, however, there will remain the problem — as yet unimportant but likely to increase in frequency as more and more booster doses of toxoid are given — of sensitization and consequent untoward reactions caused by the toxoid protein itself.

Tuberculosis

Attempts to prepare a vaccine against tuberculosis began with Koch's experiments with old tuberculin. It early became apparent that no significant protection against tuberculous infection could be achieved with anything less than whole bacilli as the antigen. Although many useful and sometimes promising studies have been carried out using killed organisms in laboratory[326] or field[327] experiments, major interest has for some years been focused on the use of the Bacillus Calmette–Guérin (BCG) — a vaccine derived from living tubercle bacillus by attenuation of a virulent bovine strain through prolonged cultivation on a bile-containing medium.[328] For practically a generation, BCG has been the center of controversies regarding its safety or its efficacy. Unfortunately, the early clinical trials in France were not supported by adequate comparisons with valid control groups, so that such

evidence as was offered to show that the vaccine afforded protection was counterbalanced, in the minds of most phthisiologists and health officers, by the belief that its use might prove not only useless but also hazardous. Perhaps the story would have been different had Calmette been able to afford the expense involved in adequate laboratory studies before the vaccine was employed in human beings. There is a wistful comment, in one of the papers of Calmette and Guérin[329] reporting on the immunization of cattle:

> It would be desirable if this method could be tried more extensively in a larger number of animals and followed during a period of years corresponding to the average life of cattle, in order to define its practical value. Unfortunately, actual economic conditions oblige us to await more favorable circumstances for the purchase and the conservation of a sufficiently significant herd.

One wonders how many studies such as this have been left hanging in a state of indecision for many years because of inadequate facilities for their evaluation at the start.

Results of Controlled Studies

At all events, there is now a large accumulation of controlled evidence regarding the ability of BCG to reduce the incidence of tuberculous infection. The first such studies appear to have been those of Heimbeck and his associates,[330] who observed that the incidence of clinical tuberculosis in tuberculin-negative medical or nursing students was very much higher than that among those who were tuberculin-positive when first enrolled. These investigators subsequently found that the administration of BCG to the tuberculin-negative groups produced as much as a sevenfold reduction in the incidence of subsequent clinical tuberculosis, as compared to the unvaccinated negative reactors. In Denmark, a recent outbreak of tuberculosis in a girl's school, arising from an infected teacher, gave striking support to the efficacy of vaccination.[331] Among 105 tuberculin-positive pupils, 2 cases of tuberculosis occurred during a three-year period; among 106 tuberculin-negative pupils who had been vaccinated with BCG, there were 2 cases, whereas among 94 unvaccinated tuberculin-negative pupils, there were 41 cases with 1 death.

On this continent, several studies have been initiated during the last twenty years, with varying results. Levine, Vogel and Rosenberg[332] and Levine and Sackett[333] continued a study program begun earlier by Park et al.[334] The earlier series (1926-32), in which infants were vaccinated or not according to the choice of their parents, had shown 0.68 per cent tuberculous deaths in 445 vaccinated infants as against 3.38 per cent in 545 controls. Strict alternation in selecting controls was applied in the second series (1933-44); the death rates then became 1.41 per cent in 566 vaccinated infants as against 1.51 per cent in 528 controls. Levine and Sackett concluded that the favorable results of the first series had been weighted by the inevitable tendency to vaccinate children of the more intelligent and co-operative parents.

Aronson and Palmer[335] have reported a six-year study of BCG vaccination in 1550 tuberculin-negative North American Indians, 1457 closely comparable subjects being observed as controls. Careful follow-up studies included x-ray examination, tuberculin tests, histories of exposure to tuberculosis (21.4 per cent in those vaccinated and 19.8 per cent in the controls) and determination of the cause of death when ascertainable. Among the vaccinated subjects 40 cases and 4 deaths from tuberculosis occurred, compared to 185 cases and 28 deaths in the controls. Thus, vaccination appeared to exert a fourfold protection against the disease and a sevenfold protection against death from tuberculosis.

Rosenthal and his associates[336] have completed a ten-year study of 1417 normal newborn infants given BCG vaccine, compared with 1414 controls. Eleven and 39 cases of tuberculosis, respectively, developed—more than a threefold protection rate. Among infants definitely exposed to tuberculosis, there was 1 case in 98 vaccinated subjects, against 4 cases among 63 random controls subject to comparable exposure.

Ferguson[337] undertook to control with BCG the alarmingly high incidence of tuberculosis in student nurses in Saskatchewan. Because of the urgent situation, and the encouraging reports of BCG vaccination from Scandinavia, it was decided not to maintain an unvaccinated control group; therefore the incidence of tuberculosis in tuberculin-negative nurses vaccinated from 1939 to 1943 was compared to that in similar unvaccinated groups observed from 1934 to 1938. The incidence of tuberculosis was 4.27 times higher in the unvaccinated nurses in general hospitals, and 5.03 times higher in sanatorium nurses, compared to the corresponding vaccinated groups. More recently, Ferguson and Simes[338] have reported the results of a twelve-year study in 306 vaccinated and 303 unvaccinated Indian infants; 73 per cent of all subjects in the study were in families including both vaccinated infants and controls. Six cases of tuberculosis and 2 deaths from tuberculosis occurred in the vaccinated group as against 29 cases and 9 deaths in the controls — a protection rate of 4.8:1 against disease and 4.5:1 against death.

In general, the studies cited above have led to a growing belief, well established in parts of continental Europe but recent in this country, that BCG can be a valuable agent in the control of tuberculosis.[339] Meanwhile, the studies referred to have been thoroughly combed for flaws, by various authorities in the field. It has been pointed out that, in Levine's series, the infant patients were not separated from their tuberculous environment pending the development of post-vaccinal immunity;

that the diagnosis of the cause of death was not always reliable; and that the absence of morbidity data makes interpretation of the over-all results of the study unsatisfactory.[340] Furthermore, Wallgren[331] shows that the results, if corrected to exclude subjects who were exposed to tuberculous infection prior to vaccination, are as favorable as those of Rosenthal. Tytler[341] prefers to draw no conclusions from Levine's study. On the other hand, favorable reports such as that of Aronson and Palmer[335] have also been subject to criticism. Levine[342] and Wilson[340] point out that in this study the cause of death was not always verified; the degree of exposure to tuberculosis in vaccinated subjects and controls was only "fairly well" balanced; and the intensity of exposure to contacts was not quantitatively evaluated. The question is raised whether good results in American Indians "can legitimately be transferred to civilized peoples having a higher degree of genetic immunity and exposed, as a rule, to a lower risk of infection."[340] However, this last comment comes from the same paper that concludes, from Levine and Sackett's data, that "under ordinary conditions in which the infants are brought up in a tuberculous environment (BCG) seems to confer little, if any, protection" — that is, an infant in New York City must be segregated from heavy exposure to tuberculosis until he has established immunity. Either line of reasoning could be correct, but it is hard to accept both at once.

Rosenthal's studies are said to have included insufficient data on the causes of nontuberculous deaths, no comparative figures on duration of observation of controls and vaccinated subjects, large numbers of "lost" cases, inadequate histories of tuberculous contacts and so forth.[340, 342] Ferguson's study is admittedly weakened by the acknowledged lack of concurrent controls; and Heimbeck's classic studies have been questioned[340] because of the complicated system by which his subjects were classified, having been transferred from one group to another according to their successive Pirquet-test readings or subsequent history of tuberculosis. However, it can readily be shown that, in Heimbeck's[343] earlier (1936) reports, in which such transfers were not made, a significant degree of protection through BCG vaccination was nevertheless apparent; and finally, Wallgren[331] cites a recent report by Heimbeck that so arranges the subjects as to eliminate this defect.

Thus, there is perhaps as yet no unassailably balanced and controlled study through which the effectiveness of BCG vaccination has been unimpeachably demonstrated. It is doubtful whether such a perfect study can ever be carried out, since it would have to be a series of studies — on infants, children and adults, of various races and with varying degrees of exposure to tuberculosis. For there will always remain skeptics who can truthfully say that one cannot with complete assurance translate results from one group to another. Such studies, moreover, would have to be set up against controls who were strictly comparable in age, race, degree of exposure, duration of observation, general health and living conditions, completeness of follow-up examination and so forth.

Present Programs and Policies

Nevertheless, the mass of controlled evidence supporting the efficacy of BCG vaccination, considered along with the much larger uncontrolled groups, which are too numerous to be cited here but have been well tabulated by Levine,[342] has led to very extensive use of the vaccine in the last few years. In Norway, BCG vaccination is reported to have been made compulsory[344] for tuberculin-negative persons in the following groups: all persons in a tuberculous environment; doctors, nurses, hospital workers and other groups with a high tuberculosis morbidity; men liable for military service; and children of school-leaving age, students and so forth. A widespread voluntary immunization program is going forward in Sweden[331] and Denmark.[345]

In 1946 the United States Public Health Service undertook the sponsorship of extensive trials of BCG vaccination,[346, 347] laying out a carefully controlled program and using vaccine furnished by a single laboratory. New York State has undertaken a somewhat similar program, under the direction of Birkhaug,[348] who has for a number of years been concerned with this problem. At much the same time a joint committee representing various tuberculosis-control agencies in Great Britain sponsored an appraisal of the policy to be followed in that country. The comprehensive report for this committee prepared by Tytler[349] concluded that BCG was harmless; that the weight of available evidence indicated that BCG offered definite protection against tuberculosis in groups subject to undue risk from this disease; that the best method of application of the vaccine was probably by puncture or scarification; and that the technical difficulties involved in studies of the use of BCG were such that a single, carefully controlled and supervised source of supply should be established. The need for careful and continued evaluation of the vaccine through properly designed and controlled programs has been reflected in the conclusions of a second United States Public Health Service conference on the problem,[350] in the stated policy of the American Trudeau Society[351] and in the promulgation of regulations for the use of BCG by the New York State Department of Health.[352] The history and background of the developments in BCG vaccination that have underlain these decisions have been amply presented in recent reviews by Aronson[353] and Birkhaug.[354]

Complications

Thus, it may be anticipated that BCG vaccine will be employed in this country on an increasing scale. What, if any, are its dangers and limitations? First among the latter is the fact, observed in every study cited, that it does not provide 100 per cent protection. In this respect it differs from no other immunizing agent. Secondly, it does cause occasional untoward reactions. Holm[345] observed an incidence of 0.7 per cent of abscesses or glandular suppuration among 3369 intracutaneous vaccinations. Difs[355] has seen serious necrosis in 0.3 per cent of 6447 vaccinations, the incidence among school children running as high as 2 or 3 per cent. However, Wallgren reports that areas of reaction larger than 10 by 10 mm. occur in only 2.8 per cent of subjects; he considers that the constant and growing spontaneous demand of parents in Sweden for BCG vaccination of their children is sufficient evidence that the reactions are unimportant.[331] Törnell[356] finds that the incidence varies greatly with the physician performing the vaccination. Lomholt[357] reports a case of lupus vulgaris developing at the site of vaccination. Various workers stress the likelihood of producing an abscess at the inoculation site if BCG is administered to a tuberculin-positive subject. On the other hand, Wallgren,[358] from an extensive experience, states that there is no danger in vaccinating already infected persons, and Nègre and Bretey,[359] in reviewing this field, find that focal and general reactions are induced in tuberculous patients only by injection of very large doses of BCG (1 mg.) compared to the usual immunizing dose of 0.05 to 0.1 mg.

Technic of Vaccination and Vaccine Preparation

A decade ago Rosenthal[360] developed the multiple-puncture technic for cutaneous BCG vaccination. This method has been employed since by others, including Birkhaug,[361] who has devised for the purpose a spring-action, multiple-point apparatus.[362] His experimental data[361] and certain of the available clinical data suggest that the cutaneous route induces a higher degree of immunity than intracutaneous inoculation, and it is the opinion of some that reactions are minimized with the use of the cutaneous route.[349, 363] Its disadvantages, on the other hand, are said to be that it is in general somewhat slower in performance; the exact amount of inoculum cannot be determined; and the apparatus is difficult to sterilize[364] and might theoretically cause some risk of transmitting serum hepatitis. These are technical difficulties, however, which have already been largely obviated by appropriate technical advances. Finally, Malmros[364] reports a relatively low tuberculin-conversion rate after cutaneous inoculation of BCG. Similar results obtained by Sigrid Holm are cited and criticized by Heimbeck,[365] who calls attention to the low potency of much of the tuberculin used in recent Scandinavian programs — a finding that is confirmed by Bøe.[366] It is to be hoped that extensive parallel studies with the two routes for BCG inoculation will be carried out, so as to furnish a basis for their comparative evaluation, and that tuberculin of uniform potency will be available in all countries performing such studies, so that dependable comparisons can be made.

BCG cultures are not entirely stable, and difficulties with their maintenance have been reported.[367] Furthermore, each batch of vaccine has a very short period of usefulness, usually set at eight to ten days. However, a Russian report[368] offers some promise of providing a method for improving the stability of the filled product, and vacuum-dried preparations of high stability are now being prepared and tried in several laboratories.

Finally, it is of interest to watch developments in the experimental use of the vole acid-fast bacillus, a mycobacterium pathogenic only for murine animals. Several experimental studies[369-371] confirm the potency of the vole bacillus for animal immunization against tuberculosis, and one experimental study in man has been reported.[372] The subject has recently been reviewed by the investigator responsible for the original discovery.[373]

Typhoid Fever

Effectiveness of Vaccination

Holt[7] has reviewed the major current trends in the control of typhoid fever by immunization, and brought up to date the classic chart of the incidence of typhoid and paratyphoid fevers in the United States Army since 1860. Except for a small outbreak in 1930, the annual rate in the Army has stayed consistently below 1 case per 10,000 strength since 1920, the peak rate in World War II being actually slightly below similar "peaks" in the prewar years 1937 and 1940. Considering the insanitary conditions under which many troops were obliged to live in the field during combat, the absence of any significant rise in incidence of typhoid during this period is truly noteworthy. A "few hundred" cases occurred, all told, in the five years of World War II, however,[7] some of which have been individually reported from a clinical standpoint[374]; others have also been studied in detail from epidemiologic and bacteriologic points of view.[375, 376] The series reported by Tribby, Stock and Warner[376] includes 45 United States Army personnel suffering from confirmed typhoid fever, and 10 with paratyphoid B fever. Such figures as these have led many observers to believe that typhoid immunization is of little value.

Cases among the immunized have likewise been reported from time to time in other groups. Margarik[377] describes an epidemic in which 15.3 per cent of the vaccinated became ill, as against 28.5

per cent of the unvaccinated; the cases in the former were said to have been mild, whereas in the unvaccinated they were generally severe. Jordan and Jones[378] present a detailed description of 44 cases, among 80 observed during an outbreak in a contingent of vaccinated British troops; the course of the disease in this group was notable for its severity, but no information was available regarding the source, and hence the intensity, of the infection. Anderson et al.[379] report 105 cases in inoculated British personnel in the Middle East, in whom the severity of the disease did not appear to have been altered by vaccination. Haedicke[380] reports 4 rather mild and atypical cases among vaccinated laboratory workers. Typhoid infection in such personnel is not always mild, however, as was vividly brought home a few months ago by the death, from this disease, of a distinguished American specialist in enteric bacteriology, who had been repeatedly vaccinated. Rist[381] summarizes his observations in World War I, during which he saw 29 cases with 7 deaths among the vaccinated, and 27 cases with 5 deaths among the unvaccinated. No figures are given to indicate the relative numbers of vaccinated and unvaccinated persons from whom this sample is drawn, nor the conditions under which infection was contracted. Rendu,[382] whose iconoclastic analyses of immunization data of various kinds are noted in detail above under "Diphtheria,"[66-68] has compared the slow drop in typhoid incidence in Paris, where vaccination is said to have been used extensively, with the almost complete disappearance of the disease in New York City, where vaccination against typhoid is negligible but sanitary measures have been thoroughly applied. He cites numerous outbreaks of typhoid fever among vaccinated personnel, chiefly in the French Army but also in American troops[374, 375] and states that "immunization of the American Expeditionary Forces has not prevented epidemics from occurring." He concludes that typhoid immunization is of little or no value. However, he is apparently unaware of recent reports in which the incidence of typhoid fever in vaccinated as against unvaccinated personnel could be compared,[377, 383-385] all of which showed a significant lowering of the rate in immunized persons. Perhaps the most outstanding figures in this respect are those resurrected by Wilson and Miles[386] from experiences during and before World War I. In British troops stationed abroad, up to 1913, 56 cases of typhoid fever had occurred among 10,378 vaccinated soldiers (0.54 per cent) as against 272 cases in 8936 uninoculated troops (3.05 per cent). In the French Army in 1915 the incidence was 0.095 per cent in the inoculated and 1.035 per cent in the uninoculated. More recently, Boyd[387] has reported the experience of the British Middle Eastern Forces in 1940–42, in Allied and enemy prison camps. Several waves of typhoid fever occurred in Italian and German prisoners held in British POW camps in this period. These outbreaks were later controlled in part by use of British vaccine, captured Italian vaccine having proved, on animal-protection tests, to be of inferior potency. On the other hand, some 25,000 British prisoners, in a highly insanitary camp near Benghazi, experienced no reported cases of typhoid fever, although they suffered about 12,000 cases of dysentery. The evidence strongly suggests that inoculation with a potent (British) vaccine gave a high level of protection, whereas the use of a less potent (Italian) vaccine, or no vaccine, led to high typhoid rates under insanitary conditions.

Preparation and Evaluation of Typhoid Vaccine

The somewhat conflicting results — and sharply conflicting opinions — cited above call for restatement of at least two elementary principles in the evaluation of any immunizing agent. The first is the fact that no such agent can ever be expected to give 100 per cent protection at all times. An agent of given efficacy may protect against an infecting dose of a given size or virulence for a variable but not limitless time; yet always there will be an infecting dose — or an interval since inoculation — that will overcome whatever protection was induced by the vaccination procedure employed. Hence the finding of cases of typhoid fever in vaccinated personnel means only that the vaccine does not always protect; this has been known for no less than thirty-five years. A satisfactory answer can only be obtained by comparison of genuinely comparable immunized and unimmunized groups — a situation that offers itself only rarely. The best controlled study of this type reported in recent years[385] indicated that vaccination had given about 95 per cent protection against what was undoubtedly, to be sure, a rather small infecting dose. It is to be hoped that more controlled studies may be turned up as further opportunities arise.

The second factor in importance is apparent from the data cited by Boyd[387] and from innumerable other studies — namely, that the potency of different batches of typhoid vaccine varies over a tremendous range. No world-wide agreement regarding the preferred method of potency testing has been reached, but the mouse-protection test — using either an actively immunized mouse, or a mouse inoculated with serum from an actively immunized person — is preferred in this country to the serum agglutinin titration. Bonnefoi et al.,[388] at the Pasteur Institute, have recently confirmed the usefulness of the protection test. In the Division of Biologic Laboratories of the Massachusetts Department of Public Health it has repeatedly been demonstrated that a given batch of starting material could be made to yield a vaccine barely capable of protecting a mouse against the standard challenge dose of virulent typhoid organisms, whereas the same material, inactivated by a dif-

ferent method, would yield a product capable of protecting a mouse against 100 such challenge doses. These results are by no means unique, similar findings having been obtained elsewhere.[389] Thus, it is necessary to have definite knowledge of the potency of a vaccine, before its success or failure in a given situation can be properly assessed.

Advances continue to be made in the understanding of the antigenic components of the typhoid bacillus, and of the means by which they can best be utilized. Carlinfanti[390] has analyzed several rather technical aspects of the present knowledge of the much-explored but still inadequately understood "Vi" antigen, with particular reference to the selection of strains suitable for the production of vaccines of optimum antigenic composition. He offers evidence that vaccines killed by formalin or desiccation are superior in potency to those prepared by phenol and heat. Drysdale[391] has carried out a careful comparison of the standard phenol-killed vaccine and the alcohol vaccine developed by Felix.[392] No significant differences were found in mouse-protective potency between the two types of vaccine. Finally, Durand[393, 394] has inactivated typhoid-paratyphoid A and B vaccine by the addition of di-ethyl or di-methyl-thiocarbamate, thereby apparently preserving the Vi antigen better than with heat killing or alcohol killing. These reports are but samples of the various studies on methods of improving the potency of typhoid vaccine, which are underway in many laboratories. It can be assumed with assurance that out of these studies there will come further improvements in the effectiveness of the vaccine.

Reactions

A contribution of the highest significance is the finding by Luippold, Longfellow and Toporek[395] that injection of three doses of 0.5, 0.5 and 0.5 cc. of vaccine gives as good an immunity as the standard schedule of 0.5, 1.0 and 1.0 cc. — and that this modified schedule causes considerably fewer untoward reactions. Since up to this date no reaction-free typhoid vaccine or purified antigen has become available, it is important to take advantage of any valid means of reducing the incidence of undesirable reactions. Luippold, Longfellow and Toporek's modified-dosage schedule should be of considerable help in this respect, since it has been adopted by the Army, approved by the United States Public Health Service[396] and recommended by the Massachusetts Department of Public Health.[397]

General Considerations

Aside from the problems related to the control of specific diseases, active immunization may be approached from several general points of view: combined immunization, choice of immunization route, reimmunization, antenatal and neonatal immunization, reactions to immunizations and so forth. Each of these topics would justify a review in itself. Most of the knowledge developed in each of these fields, however, has been acquired in the study of a specific immunization problem; hence many such observations have been cited above under the appropriate heading or were mentioned in a preceding review.[11] In most instances there is not yet sufficient knowledge on which to base a generalization from such specific studies; in others, generalizations have been accepted only with reservations. An example of the latter is the observation, mentioned above,[132-137] that repeated doses of influenza vaccine do not appear to induce successively higher antibody levels in the manner observed with most types of reimmunization. As another example, it has been found that, whereas the addition of pertussis vaccine to diphtheria toxoid enhances the effect of the latter, the reverse does not appear to be true.[73, 398]

For these reasons, as well as in the interests of space conservation, data bearing on these topics have been cited only under the appropriate disease heading. However, a few reports of particular interest and possible broad significance deserve mention.

Combined Immunization

Numerous studies cited above illustrate the antigenic effectiveness of this procedure. Its increased acceptance, coupled with the growing recognition of the importance of immunization in early infancy, has inevitably run headlong into the well established belief that diptheria immunization in early infancy is relatively ineffective, owing to the persistence of maternally transmitted antibodies. This explanation has been strikingly confirmed by the studies of Cooke,[93] who administered combined diphtheria and tetanus toxoids to 284 infants from one to fourteen months of age. Tetanus antibodies developed equally well in all age groups, correlating with the complete absence of either passive or active tetanus immunity in the study group. The response to diphtheria toxoid was relatively poor in a significant percentage of the infants under six months old, however, and these subjects proved to be, for the most part, the very infants who were born with maternally inherited antibodies. Similar findings have been reported by di Sant' Agnese.[188]

This evidence strengthens the case for separate administration of diphtheria toxoid after six months, pertussis vaccine preferably being given earlier (tetanus toxoid can be included at any convenient point). However, the findings of Bell[74] very clearly suggest that the adjuvant effect of combining a pertussis vaccine with diphtheria toxoid fully offsets — from a statistical standpoint — the opposing effect of passive immunity in early infancy. About 8 per cent Schick failures were observed by Bell in the very young infants receiving the

combined vaccine, as against 10 per cent failures in the older infants receiving the unmixed toxoid. There is now much additional evidence that combined antigens exert a potent effect in neonatal immunization, although the effect is in general less marked than that obtained in somewhat older infants. The various studies of di Sant' Agnese[94, 187, 188] on neonatal immunization present ample evidence to this effect; adequate antibody levels against both pertussis and diphtheria were produced in most subjects in both age groups, but were definitely higher in the older group with respect to both diseases (the response to tetanus toxoid was excellent in both groups, no difference being disclosed by the method of assay). A booster dose six months after primary immunization produced equally high diphtheria antitoxin titers in both age groups, wiping out the pre-booster difference, but the booster response to pertussis vaccine was definitely better in the older group. Among older infants, there is more extensive evidence that combined antigens are effective, two recent reports by di Sant' Agnese[399] and Fleming and his associates[398] being among the most thorough studies in this field. Meanwhile, the Study Committee on Multiple Antigens of the American Public Health Association has been conducting extensive quantitative field evaluations of various antigen combinations; under its sponsorship have appeared a preliminary summary of recommendations[400] and a report on reactions caused by various combinations[401]; it is understood that the full report of this committee may shortly be available.

Reactions to combined antigens continue to be the chief stumbling block to their general acceptance, although reports in this respect vary between both extremes. Volk[401] has reported on the use of nine different preparations comprising six different combinations of diphtheria and tetanus toxoids, scarlet-fever toxin, pertussis vaccine and typhoid vaccine, including a preparation containing all five antigens. He found — not unexpectedly — that the most severe reactions were related to inclusion of scarlet-fever toxin; that reactions to typhoid vaccine and diphtheria toxoid were commoner in adults than children; that children had fewer local and more general reactions than adults; and that five-antigen preparations could be administered safely to special groups. These are comparative rather than absolute results, and hence are somewhat difficult to translate into actual practice. However, the subjective nature of a "reaction" was clearly observed by Volk, who found that the incidence of absenteeism from school was markedly reduced by advance explanation of the probable effect of the inoculations.

Oral Immunization

The subject of immunization, which can become somewhat dry when expanded beyond a few paragraphs, has been resuscitated by Dolman[402] in an extensive and stimulating review of oral immunization. The conclusion reached — that there is "no present justification for even occasional resort to oral immunization" — is approached philosophically as well as scientifically by Dolman, with whose opening remarks this review may draw to a close:

> Mankind seems to enjoy placing a wide variety of objects into the mouth, but displays a widespread dislike of the needle puncture. From these impulsions, which are perhaps primordial, may derive much of the preference likely to be shown for oral ingestion rather than hypodermic injection of specific therapeutic and prophylactic substances, whether narcotics, endocrines, sulfonamides, antibiotics, or immunizing agents.

One might add that mankind possesses a correlated primordial instinct, to try anything once, and usually more than once. Immunization procedures (by any route) are no exception to this rule. It is true that much may be accomplished by the use of unusual procedures under certain specified conditions — for example, the sucking of toxoid pastilles for booster immunization.[78, 79] However, if there is any one major theme running through the varied components of this review, it is that much is yet unknown in the field of active immunization, that decision is indeed difficult, and that experiment can without doubt at times be perilous. Much disappointment and disillusion may be avoided, if the discerning physician will insist that the experimental evidence be adequate, before introducing a new procedure into his practice. One needs only to recall the history of "cold vaccines," liquid pertussis antigen, "undenatured bacterial antigen" or the two-dose schedule for fluid diphtheria toxoid— not to mention the currently receding wave of high enthusiasm for influenza vaccine — to realize once again how much energy both the doctor and the patient can expend on bright but unfulfilled hopes in this field.

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MASSACHUSETTS MEDICAL SOCIETY

PROCEEDINGS OF THE COUNCIL

Annual Meeting, May 23, 1949

THE annual meeting of the Council was called to order by the President, Dr. Daniel B. Reardon, on Monday, May 23, 1949, at 7:00 p.m., in the Ballroom of the Sheraton Hotel, Worcester.

Two hundred and three councilors were present (Appendix No. 1).

After opening the meeting, the President read the following obituary:

JOHN HUGHES — Dr. John Hughes, associate medical examiner and a practicing physician and surgeon in Pittsfield for twenty-five years, died suddenly on February 12 in Bristol, Rhode Island, where he was visiting his mother, who was seriously ill. He was sixty-six years old.

A native of Bristol, Rhode Island, Dr. Hughes was born on January 21, 1883, son of Elizabeth Hamill Hughes and the late John J. Hughes, and had lived in Pittsfield for more than a quarter of a century. He was a graduate of Providence High School, and had received his degree from University of Vermont College of Medicine in 1905. He took postgraduate work at the New York Postgraduate Hospital. He came to Pittsfield from Holyoke in 1924, where he had practiced for fifteen years. In 1937 he was appointed associate medical examiner by Governor Charles F. Hurley.

He was a member of the Berkshire District Medical Society, and councilor from that district. He also belonged to the American Medical Association. Dr. Hughes was a member of the staff of St. Luke's Hospital and served as its president, and was also on the staff of the Pittsfield General Hospital.

At the request of the President, the Council stood in silent tribute to the departed member.

The President then announced the following interim appointments, which were approved by vote of the Council:

To the Committee to Meet with Massachusetts Nurses Association:

Dr. Richard B. Cattell, *Chairman*
Dr. Peirce H. Leavitt
Dr. David L. Belding
Dr. William F. Wood
Dr. Joseph A. Holmes

Co-ordinating Committee:

Dr. Frank H. Lahey, *Chairman*
Dr. Charles J. Kickham
Dr. Leland S. McKittrick
Dr. Patrick J. Sullivan
Dr. John J. Curley
Dr. Walter G. Phippen
Dr. Frank W. Snow
Dr. Earle M. Chapman
Dr. Daniel B. Reardon
Dr. Arthur W. Allen
Dr. Donald Munro
Dr. H. Quimby Gallupe
Dr. Eliot Hubbard, Jr.
Dr. Norman A. Welch
Dr. Elmer S. Bagnall
Dr. David L. Belding
Dr. Vlado A. Getting
Dr. Augustus Thorndike
Dr. Charles G. Hayden
Dr. Henry A. Robinson
Dr. Harold R. Kurth
Dr. Curtis C. Tripp
Dr. Joseph Garland
Dr. John F. Conlin

The Secretary presented the record of the meeting of the Council of February 2, 1949, as published in the *New England Journal of Medicine*, issue of April 7, 1949, and moved its acceptance. The motion was seconded, and it was so voted.

REPORTS OF COMMITTEES

Committee on Nominations — Dr. Albert A. Hornor, Suffolk, *Chairman.*

The committee convened at 8 Fenway on April 13, 1949, and nominated the following officers of the Society for the year 1949–1950:

President, Dr. Arthur W. Allen
President-elect, Dr. Leland S. McKittrick
Vice-president, Dr. Albert A. Hornor
Secretary, Dr. H. Quimby Gallupe
Treasurer, Dr. Eliot Hubbard, Jr.
Assistant treasurer, Dr. Norman A. Welch
Orator, Dr. John W. O'Meara

Dr. Hornor moved the acceptance of the report. The motion was seconded, and it was so voted. It was moved and seconded that the nominations be closed. It was so voted. It was moved that the Secretary cast one ballot for the list of nominees as presented. The motion was seconded, and it was so voted. The Secretary cast one ballot as directed.

Dr. Reardon then presented Dr. Arthur W. Allen as the next president. Dr. Allen replied that the vote of confidence was deeply appreciated and that no member of the Society receiving this great honor could possibly fail to be duly impressed. Dr. Allen then gave an address, which was published in the June 16 issue of the *Journal.*

Dr. Reardon then presented the other elected officers, and asked Dr. Donald Munro to escort Dr. Leland S. McKittrick to the platform.

Executive Committee — Dr. H. Quimby Gallupe, Middlesex South, *Secretary.*

The Secretary submitted the report of the committee (Appendix No. 2), which met on April 20, 1949. He stated that 14 members of the committee were present at the meeting.

The Council by vote and without debate approved of the actions of the Executive Committee under its new business.

The Secretary moved that the report of the Committee on Membership as presented to the Executive Committee be approved by the Council. The motion was seconded, and it was so voted.

Joint Report of the Committees on Public Relations and Medical Economics — Dr. Harold R. Kurth, Essex North, *Secretary*, and Dr. Elmer S. Bagnall, Essex North, *Chairman*.

Dr. Bagnall presented the report as printed in the circular of advance information to councilors and moved the approval of the fourteen points (Appendix No. 3). The motion was seconded.

The President recognized Dr. James C. McCann (Worcester), who spoke at length (Appendix No. 4) and moved the adoption of the amendment. Dr. Elmer Bagnall seconded the motion.

Dr. Charles C. Lund (Suffolk) questioned the wording of the amendment. Dr. McCann then changed the wording of the amendment as follows:

> Section 4. Voluntary prepayment group health plans, embodying group practice and providing comprehensive service, when practicable, sometimes offer their members adequate medical care. No such plan shall be obstructed in procuring enabling legislation. No physician participating in such a plan shall be denied, by reason of participation per se, 1, membership in established medical societies; 2, hospital-staff appointments dependent upon such society membership; 3, consultation courtesies by nonparticipating physicians on the usual plane of ethical relationship.

The President called for a vote on the amendment as corrected by Dr. McCann. The motion was carried.

The President recognized Dr. Basil E. Barton (Norfolk), who offered the following resolution from the Norfolk District Medical Society and moved its adoption: "Resolved, that the Councilors of Norfolk District Society desire the clarification of points 8, 10 and 13 of the principles enunciated in the Joint Report of the Committee on Public Relations and the Committee on Medical Economics, before they can vote on it."

The motion was seconded, and it was so voted.

Dr. Bagnall then clarified the principles from the point of view of the committees. Dr. Barton questioned whether article No. 13 referred to subsidies to schools or students — if the latter, Norfolk would object. Dr. Bagnall said that could not be answered specifically.

Dr. H. B. Harris (Norfolk) moved that principle No. 13 be stricken from the record. The motion was seconded.

Dr. Vlado A. Getting (Middlesex South) said that if the motion carried, Massachusetts stood to lose $3,000,000 for public health.

Dr. Leroy E. Parkins (Suffolk) moved that principle No. 13 be referred back to the committee for a report at the next meeting of the Council. The motion was seconded and so voted by a show of hands 84 to 68.

Dr. Carl Bearse (Norfolk) made a motion that principle No. 10 be stricken out since it prohibited free choice of physician. The motion was seconded. The Secretary pointed out that these principles had been drawn very carefully, and after long discussion by a group well versed in the problems involved.

Dr. Lund spoke in favor of the principle as now amended. The President called for a voice vote, and the motion was defeated.

Dr. Albert A. Hornor (Suffolk) made a motion that the word "encourage" be substituted for the word "support" in principle No. 8. The motion was seconded, and it was so voted.

Dr. Bernard Appel (Essex South) made a motion to insert the words "voluntary prepayment" before the word "plan" in principle No. 10. The motion was seconded, and it was so voted.

The President then called for a vote on approval of the report as amended. The report was approved by voice vote.

Committee on Tax-Supported Medical Care — Dr. Albert A. Hornor, Suffolk, *Chairman*.

Dr. Hornor made a motion to approve the report (Appendix No. 5). The motion was seconded.

Dr. Bagnall expressed the wish that the committee would further discuss regular office fees for multiple first visits in home or office, and thereafter full fee for one patient and $1.00 for each additional patient. Dr. Hornor promised such discussion. The President put the question, and the motion was carried.

Committee on Legislation — Dr. Curtis C. Tripp, Bristol South, *Co-chairman*.

Dr. Tripp submitted the report as printed (Appendix No. 6) and moved its approval. The motion was seconded and so voted.

Subcommittee on National Legislation — Dr. Elmer S. Bagnall, Essex North, *Chairman*.

Dr. Bagnall moved the adoption of the report as printed (Appendix No. 7). The motion was seconded and so voted.

Committee on Publications — Dr. Richard M. Smith, Suffolk, *Chairman*.

Dr. Smith moved approval of the report as printed (Appendix No. 8). The motion was seconded, and it was so voted.

Committee on Arrangements — Dr. Harold G. Giddings, Middlesex South, *Chairman*.

Dr. Giddings moved for approval of the report as presented (Appendix No. 9). The motion was seconded, and it was so voted.

Committee on Ethics and Discipline — Dr. Ralph R. Stratton, Middlesex East, *Chairman.*

Dr. Stratton moved adoption of all but the last paragraph of the report as printed (Appendix No. 10). The motion was seconded, and it was so voted.

Dr. Stratton then moved to amend the report by striking out the last paragraph and substituting the following:

> About November 1, 1948, the committee received from the Eye and Ear Infirmary of the Massachusetts General Hospital a code of ethical conduct that was to govern them in their public relations. They requested our examination of this code in relation to the code of ethics of the Massachusetts Medical Society.
>
> This code was studied and discussed at the meeting of the Committee on Ethics and Discipline on December 1, 1948. After this discussion, the committee unanimously voted that the code as proposed did not violate any of the provisions of the code of ethics of the Massachusetts Medical Society, nor of those of the principles of medical ethics of the American Medical Association.
>
> At the request of the Council, the matter was reconsidered at a meeting of the Committee on Ethics and Discipline on February 16. The Committee again reaffirmed that the code proposed by the Eye and Ear Infirmary did not violate the provisions of the code of ethics of the Massachusetts Medical Society, nor those of the principles of medical ethics of the American Medical Association.

The motion was seconded.

Dr. Donald Munro (Suffolk) stated that this amendment had cleared up objections to the report, but that there was a need for a code governing publicity that would be available to all hospitals, and he offered a second amendment as follows:

> That a committee of five be appointed by the President from representative districts of the Commonwealth to write a Massachusetts Medical Society Code to govern publicity. They shall report at the next meeting of the Council.

This motion was seconded, and it was so voted.

The President then put the question of the first amendment, and it was so voted.

Committee on Medical Education — Dr. Chester S. Keefer, Suffolk, *Chairman.*

Dr. James M. Faulkner (Norfolk), for Dr. Keefer, submitted the report as printed (Appendix No. 11) and moved its adoption. The motion was seconded, and it was so voted.

Advisory Subcommittee on Medical Education — Dr. Isaac R. Jankelson, Norfolk, *Chairman.*

Dr. Jankelson submitted the majority and minority reports as printed (Appendix No. 12) and moved their acceptance. The motion was seconded, and it was so voted.

Dr. Jankelson then moved for the approval of the second recommendation in the majority report. The motion was seconded, and it was so voted. Dr. Jankelson then moved the approval of the first recommendation of the majority report as the one that had aroused the discussion and the disagreement by one committee member. The motion was seconded, and it was so voted.

Committee on Public Health — Dr. Roy J. Ward, Worcester, *Chairman.*

Dr. Ward presented the report as printed (Appendix No. 13). Dr. Ward then moved the approval of the first recommendation concerning the use of BCG vaccine by the Public Health Department of the City of Boston. The motion was seconded, and it was so voted.

Dr. Ward moved approval of the second recommendation that greater emphasis be placed on education in the subject of nutrition in health. The motion was seconded, and it was so voted.

Dr. Ward moved approval of the third recommendation concerning the pilot health clinics and further that a subcommittee of the Committee on Public Health representing the eighteenth districts to carry out the program be appointed and that the committee have power to act. The motion was seconded.

Dr. Barton (Norfolk) moved the adoption of the following resolution: "Resolved, that the councilors of the Norfolk District request from the Council an explanation of the mechanism of the origin and activation of pilot clinics proposed in the report of the Committee on Public Health before they can vote on it." The motion was seconded.

Dr. Ward then stated that it was the hope of his committee that a pilot clinic could do at one process what now is done in many for the detection of diabetes, heart disease, tuberculosis and so forth.

Dr. Appel said he thought the appointed committee should not be given power to act. Dr. W. A. R. Chapin agreed with him.

Dr. Earle M. Chapman (Suffolk) spoke at length for the recommendation. Dr. John J. Curley (Worcester North) said the Executive Committee favored the pilot clinic plan. Dr. Lawrence Dame (Franklin) agreed with Dr. Curley.

The Secretary then read a document entitled "Health-Protection Clinics" (Appendix No. 14), which had been presented to the Executive Committee. Dr. Maurice Fremont-Smith (Suffolk) spoke in favor of the plan. Dr. Donald Munro said he favored the plan as long overdue.

Dr. Leroy E. Parkins moved an amendment that "pilot clinic" be substituted for "pilot clinics." The motion was seconded. Dr. Parkins moved a second amendment that a committee appointed be empowered to act in accordance with the eight principles in Dr. Getting's program. This motion was seconded.

Dr. Arthur Allen said he believed there should be more than one clinic. Dr. Parkins agreed to change his amendment to read "not more than five pilot clinics."

Dr. Reardon put the question of the second amendment, and it was so voted. Dr. Reardon put the question of the first amendment, and it was so voted.

Dr. Ward then moved that Section 5 of the report be approved. The motion was seconded, and it was so voted.

Dr. Ward then moved that the Council approve of the resolution concerning diabetes detection. The motion was seconded, and it was so voted.

Dr. Ward then made a motion to approve the entire report as amended. The motion was seconded, and it was so voted unanimously.

Committee on Medical Defense — Dr. Horatio Rogers, Suffolk, *Chairman.*

Dr. Rogers submitted the informational report as printed and moved its approval (Appendix No. 15). The motion was seconded, and it was so voted.

Committee on Society Headquarters — Dr. Frank R. Ober, Suffolk, *Chairman.*

Dr. Ober presented the report (Appendix No. 16) as printed. The Secretary then showed slides of the proposed location and buildings of the Boston Museum of Science on the banks of the Charles River at the dam. Dr. Ober made a motion that the Council approve exploration of the possibilities implicated and report the findings at a future meeting of the Council. The motion was seconded, and it was so voted.

Committee on Industrial Health — Dr. Daniel L. Lynch, Norfolk, *Chairman.*

Dr. Lynch presented the report as printed (Appendix No. 17) and moved its approval. The motion was seconded, and it was so voted. Dr. Lynch made a motion that the Council approve the formation of a section on industrial health. The motion was seconded, and it was so voted.

Committee to Meet with the Massachusetts Hospital Association — Dr. Albert E. Parkhurst, Essex South, *Chairman.*

Dr. Parkhurst presented the informational report as printed (Appendix No. 18) and moved its acceptance. The motion was seconded, and it was so voted.

Committee on Maternal Welfare — Dr. Duncan Reid, Suffolk, *Chairman.*

Dr. Reid was not present. The President declared the report (Appendix No. 19) informational. It was moved and seconded and voted to accept the report.

Committee on Post-Graduate Medical Education — Dr. W. Richard Ohler, Norfolk, *Chairman.*

Dr. Ohler presented his informational report as printed (Appendix No. 20) and moved its acceptance. The motion was seconded, and it was so voted.

Committee on Medical Economics — Dr. Elmer S. Bagnall, Essex North, *Chairman.*

Dr. Bagnall presented the report as printed (Appendix No. 21) and moved its acceptance. The motion was seconded, and it was so voted.

Committee to Make Recommendations as to Future Directors of the Blue Shield — Dr. Leland S. McKittrick, Suffolk, *Chairman.*

Dr. McKittrick presented his report as printed (Appendix No. 22) and moved the appointments of the names submitted to become directors of Blue Shield, as indicated, until 1952 or 1951. The motion was seconded, and it was so voted.

Committee on School Health — Dr. Ernest M. Morris, Middlesex South, *Chairman.*

Dr. Morris presented the report as printed (Appendix No. 23) and moved its acceptance. The motion was seconded, and it was so voted.

Subcommittee of the Executive Committee on Blue Cross–Blue Shield Problems — Dr. Charles J. E. Kickham, Norfolk, *Chairman.*

Dr. Kickham presented his report as printed (Appendix No. 24). He stated that for better public relations the whole aspect of fees should be investigated, as well as charges made to Blue Shield subscribers with incomes just over the fixed minimum.

He moved adoption of the recommendation as printed, "That a subcommittee of the Committee on Public Relations be constituted to investigate the problem and recommend an appropriate remedy." The motion was seconded.

Dr. Arthur Allen said he approved and offered an amendment to the effect that the proposed committee explore the whole question of fees throughout the Commonwealth.

The motion was seconded, and it was so voted. The President then called for a vote on approval of the whole report as amended. It was so voted.

Committee on By-laws and Council Rules — Dr. Edward P. Bagg, Hampden, *Chairman.*

Dr. Bagg submitted the report (Appendix No. 25) and added:

> In addition to that, you received copies of the by-law changes that were approved at previous meetings of the Council. I should like to ask you to accept two corrections to the latter. In order to clarify the position of the new Committee on By-laws and Council Rules, I request that you allow the change from the word "under" to "to"; there was omitted in the amendment, Chapter IV, Section 3, the word "on" in front of "by-laws." Therefore, it will read, "Resolved, that Chapter IV, Section 3 of the by-laws be, and hereby is, amended by the deletion of the word "and" (in line 9, page 14), after "Finance" and by the addition to the enumeration of standing committees the following words, "on by-laws and council rules."

The motion was seconded, and it was so voted. Dr. Bagg then made the following motion:

in order to avoid as many errors as possible, I move that the proposed by-laws shall be submitted, for correction of any errors in form, to an assistant editor of the *New England Journal of Medicine*. I also move authorization and the publication of a new volume containing the Digest, By-laws, Code of Ethics and Medical Defense Act of the Society, and the Principles of Medical Ethics of the American Medical Association.

The motion was seconded and so voted.

Dr. Bagg moved for approval of the report as a whole. The motion was seconded, and it was so voted.

Committee on Diabetes — Dr. Howard F. Root, Suffolk, *Chairman*.

Dr. Root presented the report as printed (Appendix No. 26) and moved its acceptance. The motion was seconded, and it was so voted.

Committee on Veterans Affairs — Dr. Harvey A. Kelly, Suffolk, *Chairman*.

Dr. Kelly presented the report as printed (Appendix No. 27) and moved its acceptance. The motion was seconded, and it was so voted.

Report of the Treasurer

Dr. Eliot Hubbard, Jr., Middlesex South, presented the report as printed (Appendix No. 28) and moved its acceptance. The motion was seconded, and it was so voted.

Auditor's Report

Dr. Gallupe read the report of the Auditing Committee (Appendix No. 29), Dr. Howard B. Jackson, Norfolk, *Chairman*, and moved its acceptance. The motion was seconded, and it was so voted.

The Secretary then moved that the report of the Executive Committee as amended be approved. The motion was seconded, and it was so voted.

New Business

The President recognized Dr. Barton, of Norfolk, who offered the following resolution presented by the Councilors of the Norfolk District Medical Society: "Resolved, that Norfolk District requests the Council for a delineation of the developments that have taken place regarding the report of the Committee on Special Services," and moved its acceptance. Dr. Reardon said that under the Council Rules he would refer the resolution to the Committee to Meet with the Massachusetts Hospital Association.

The President then recognized Dr. William Elliot, Worcester, who presented the following resolution:

That the committee from the Massachusetts Medical Society to confer with the Massachusetts Hospital Association be instructed to take steps to expedite the acceptance and practice of the principles enunciated by the Committee to Study Special Services; that the Secretary send a copy of the report of the Committee to Study Special Services to the Massachusetts Hospital Association with the specific request that action be taken on the report by that body; and that the committee from the Massachusetts Medical Society to confer with the Massachusetts Hospital Association be requested to report to the Council at the October, 1949, meeting.

Dr. Reardon referred the resolution to the Committee to Meet with the Massachusetts Hospital Association.

Dr. Reardon then presented Dr. Arthur W. Allen, the president-elect, who read his committee appointments and the chairmen and secretaries of the new sections, and the delegates to the American Medical Association. (Dr. Allen's appointments were acted upon, and all approved at the annual meeting of the Society the next day.)

The President said that if there were no further matters of new business, a motion to adjourn was in order. The motion was made, seconded and so voted at 11:00 p.m.

H. Quimby Gallupe, *Secretary*

APPENDIX NO. 1

Berkshire

D. N. Beers
P. J. Sullivan

Bristol North

M. E. Johnson
W. M. Stobbs

Bristol South

J. C. Corrigan
A. J. Pothier
C. C. Tripp

Essex North

E. S. Bagnall
R. E. Blais
J. A. Bradley
A. P. George
H. R. Kurth
R. C. Norris
L. C. Peirce
F. W. Snow
L. T. Stokes
F. N. Sweetsir
C. A. Weiss

Essex South

Bernard Appel
S. N. Gardner
R. P. Hallett
A. E. Parkhurst
E. D. Reynolds
H. D. Stebbins
C. J. Twomey

Franklin

J. E. Moran

Hampden

F. H. Allen
E. P. Bagg
R. L. Barrett
W. A. R. Chapin
J. L. Chereskin
G. B. Corcoran
A. J. Douglas
E. C. Dubois
A. F. G. Edgelow
Frederic Hagler
A. G. Rice
G. L. Schadt
H. N. Simpson
G. L. Steele

Hampshire

J. R. Hobbs
E. J. Manwell
L. B. Pond

Middlesex East

J. L. Anderson
T. P. Devlin
Robert Dutton
E. M. Halligan
K. L. Maclachlan
H. L. Mueller
M. J. Quinn
R. R. Stratton

Middlesex North

W. M. Collins
S. A. Dibbins
L. J. Hall
L. F. King
A. J. Stewart
J. D. Sweeney

Middlesex South

E. W. Barron
J. M. Baty
J. D. Bennett
W. O. Blanchard
G. F. H. Bowers
Madelaine R. Brown
R. N. Brown
R. W. Buck
E. J. Butler
E. A. Cooney
C. L. Derick
A. G. Engelbach
C. W. Finnerty
J. M. Flynn
H. Q. Gallupe
V. A. Getting
H. G. Giddings
H. W. Godfrey
J. L. Golden
Eliot Hubbard, Jr.
F. R. Jouett
H. A. Kontoff
A. A. Levi
A. N. Makechnie
J. H. McSweeney

J. C. Merriam
Dwight O'Hara
Fabyan Packard
L. S. Pilcher
Max Ritvo
G. A. Saunders
J. H. Townsend
C. F. Walcott
R. H. Wells

NORFOLK

A. A. Abrams
B. E. Barton
Carl Bearse
Elizabeth Broyles
G. L. Doherty
Albert Ehrenfried
J. M. Faulkner
P. S. Foisie
D. L. Halbersleben
J. A. Halsted
H. B. Harris
C. G. Hayden
Susannah Friedman
R. J. Heffernan
P. J. Jakmauh
I. R. Jankelson
C. J. Kickham
C. J. E. Kickham
D. L. Lionberger
D. S. Luce
C. M. Lydon
T. F. P. Lyons
D. L. Lynch
H. L. McCarthy
F. J. Moran
H. R. Morrison
D. J. Mullane
H. A. Novack
W. R. Ohler
E. E. O'Neil
R. S. Palmer
H. A. Rice
L. A. Sieracki
S. L. Skvirsky
E. C. Smith
Kathleyne Snow
J. W. Spellman
A. R. Stagg
W. J. Walton
N. A. Welch
W. A. White, Jr.
G. F. Wilkins
P. R. Withington
E. T. Wyman

NORFOLK SOUTH

F. A. Bartlett
D. L. Belding
Harry Braverman
R. L. Cook
Frederick Hinchliffe
E. K. Jenkins
N. R. Pillsbury
D. B. Reardon
H. A. Robinson
R. G. Vinal

PLYMOUTH

Samuel Gale
P. H. Leavitt
C. D. McCann
G. A. Moore

SUFFOLK

H. L. Albright
M. D. Altschule
A. W. Allen
T. J. Anglem
C. H. Bradford
W. E. Browne
A. M. Butler
A. J. A. Campbell
E. M. Chapman
M. H. Clifford
Joseph Garland
A. A. Hornor
H. A. Kelly
H. E. Kennard
T. H. Lanman
R. I. Lee
C. C. Lund
L. S. McKittrick
Donald Munro
F. R. Ober
L. E. Parkins
L. E. Phaneuf
H. S. Pittman
J. H. Pratt
J. J. Regan
Horatio Rogers
H. F. Root
C. G. Shedd
R. M. Smith
Conrad Wesselhoeft

WORCESTER

A. W. Atwood
F. P. Bousquet
Jacob Brem
J. B. Butts
F. B. Carr
E. J. Crane
Paul Dufault
G. R. Dunlop
W. J. Elliott
John Fallon
Donald Hight
Thomas Hunter
H. L. Kirkendall
D. G. Ljungberg
J. A. Lundy
J. C. McCann
D. K. McClusky
J. M. Olson
F. A. O'Toole
G. L. Richmond
N. S. Scarcello
J. J. Tegelberg
R. J. Ward
B. C. Wheeler

APPENDIX NO. 2

REPORT OF THE EXECUTIVE COMMITTEE

President Reardon called the meeting to order, and the Secretary called the roll. Councilors from Barnstable, Berkshire, Hampshire and Plymouth were absent. The Secretary stated that no business had been referred from the Council.

Under new business, the Secretary read a letter from Dr. Walter E. Barton, president of the Massachusetts Psychiatric Society, requesting the establishment of a section on psychiatry and neurology. It was moved and seconded that such a section be established. It was so voted without discussion.

The Secretary read a letter from Dr. Lawrence R. Dame requesting a new section on ophthalmology and otolaryngology. On a motion duly made and seconded, it was voted to establish such a section.

The Secretary then stated that at a meeting of district-society secretaries it was voted to request the Executive Committee to consider recommending annual registration of physicians in Massachusetts. The Secretary pointed out that once the Council had voted in favor and once had voted against annual registration. He said the General Court might write a bill for annual registration that might not be satisfactory to the Society.

The Secretary stated that no list of registered physicians is available for any purpose. Dr. John Fallon, Worcester, said he was registered every year in Minnesota; that it was no burden to him; that it helped to keep out the unregistered illegal practitioners; and that he favored it. The President stated that nurses and dentists register annually.

The Secretary pointed out that the legislation could include the publication of the list of registered physicians, and that such a list would be helpful to the Society. Dr. John Curley, Worcester North, moved that the Committee on Legislation and our legal counsel write a bill calling for annual registration. The motion was seconded.

Dr. Dame, Franklin, asked what would happen to a doctor who was late in registering. The Secretary stated that punishment, if any, would have to be written in the bill. Dr. Dame pointed out that now physicians must be licensed in cities and towns and that not to be so licensed causes trouble for the doctor. Dr. Welch said he had helped to defeat a similar bill and that the Board of Registration could not use the money obtained from fees for investigations. Dr. Welch said that the defeated bill was poorly drawn. Dr. Munro agreed with Dr. Welch that the bill was bad and might have meant that a doctor would have to be re-examined if he failed to re-register.

Dr. Gallupe stated that a doctor is registered only once and that re-registration is not accompanied by re-examination. He pointed out that no board has the full use of monies taken in, and that the board cannot investigate unregistered practitioners since that is the duty of the state police. Dr. Charles J. E. Kickham said we shouldn't approve a bill until one is written. Dr. Welch said bills are often changed markedly by the legislature. Dr. Reardon stated the motion: we approve of annual registration and recommend that a bill be written by the Committee on Legislation. The motion was seconded and defeated 11 to 3.

Dr. Reardon then stated that the fourth matter for consideration under new business was referred to the committee by a meeting of officers and delegates of the Society to which the editor of the *Journal*, Blue Shield and Massachusetts National Physicians Committee members and critics of the American Medical Association leadership had been invited. It was the opinion of this group that the Executive Committee should consider recommending that our delegates to the American Medical Association be instructed to urge the House of Delegates to separate Dr. Fishbein from any official position in the American Medical Association organization; take proper steps to end the National Physicians Committee; hasten the plan for national enrollment of Blue Cross–Blue Shield as outlined by Dr. Paul Hawley; reorganize the Council on Medical Service of the American Medical Association.

Dr. Reardon stated that the second recommendation had been accomplished by the National Physicians Committee itself. Dr. Munro asked if the item might be considered separately. Dr. Reardon gave consent.

The Secretary stated that criticism concerning Dr. Fishbein had been voiced at the joint meeting held on February 9 of the committees on Public Relations and Medical Economics, but that at a meeting of our co-ordinating committee the opinion was expressed that it would be better now to fight *for* things rather than to fight *against* other doctors. It is better public relations to let the public know we are not fighting amongst ourselves.

Dr. Munro made a motion to disapprove of the first recommendation. The motion was seconded. Dr. Munro thought it would be a tactical error to carry out the recommendation at this time. The President put the question to vote, and the motion was carried.

Dr. Reardon then presented the third recommendation. Dr. John Curley said he believed Dr. Elmer Hess would

present a favorable report on National Blue Shield at the American Medical Association Delegates meeting. Dr. Reardon said National Blue Cross is already a fact. Dr. Kickham stated that the committee on Blue Cross-Blue Shield Problems had made recommendations to the Society in favor of a national Blue Shield enrollment service. Dr. Fallon said he believed it would be wise to favor a national Blue Shield scheme and moved that in place of this recommendation, the executive committee approve in principle the idea of a national Blue Shield enrollment agency. The motion was seconded, and it was so voted.

Concerning the fourth recommendation Drs. Fallon and Curley suggested that our delegates might do well to sit in at meetings of the Council and talk with its members. Dr. Fallon thought it better not to interfere at this time. Dr. Munro moved to lay this recommendation on the table. The motion was seconded, and it was so voted.

The Secretary said he had a letter requesting the Society to take action concerning the parking of doctors' cars without interference by the police. The only solution offered by the Secretary was to have the letters "M.D." precede the license number on the doctors' cars. Dr. Curley moved that this matter be laid on the table. The motion was seconded and so voted.

The Secretary then presented a request from the chairman of the Committee on Physical Medicine that his committee be discharged and replaced by a single committee on physical medicine and rehabilitation. The Secretary suggested that this matter be left to the discretion of Dr. Arthur Allen, whose duty it is to appoint committees for the ensuing year. Dr. Curley moved the matter be laid on the table. The motion was seconded, and it was so voted.

The Secretary then stated that Dr. Reardon wished the committee to approve of his appointment of a co-ordinating committee to carry out the educational campaign of the American Medical Association as follows: Dr. Frank Lahey, chairman; Drs. Charles J. Kickham; Leland S. McKittrick; Patrick J. Sullivan; John J. Curley; Walter G. Phippen; Frank W. Snow; Earle M. Chapman; Daniel B. Reardon; Arthur W. Allen; Donald Munro; H. Quimby Gallupe; Eliot Hubbard, Jr.; Norman A. Welch; John F. Conlin; Elmer S. Bagnall; David L. Belding; Vlado A. Getting; Augustus Thorndike; Charles G. Hayden; Henry A. Robinson; Harold R. Kurth; Curtis C. Tripp; Joseph Garland.

Dr. Maclachlan moved the approval of this committee. The motion was seconded, and it was so voted. The Secretary said this committee wanted the Council to approve the educational campaign of the American Medical Association. Dr. Curley made the motion to approve, which was seconded, and it was so voted.

The Secretary presented the report of the Committee on Membership and moved its acceptance. The motion was seconded, and it was so voted.

Dr. Reardon then presented the joint report of the Committee on Public Relations and the Committee on Medical Economics. Dr. Maclachlan said Middlesex East District approved all except principle 13. Dr. Fallon said he believed principle 13 had been approved by the American Medical Association essentially as it stands. Dr. Reardon said he believed the fourteen points answered our critics who say we have done nothing constructive. Dr. Fallon said he believed all these points could be found in the records of the Council on Medical Service. Dr. Munro moved approval of the report as printed. The motion was seconded, and it was so voted.

Dr. Reardon then asked the committee to consider the report of the Committee on Society Headquarters, which asks for authority to explore the possibility of obtaining headquarters for the Society, the Library and the *Journal* and to report its findings at a future meeting of the Council. The President stated that the committee had met with officers of the Boston Museum of Science to discuss the possibility of joining with them at their proposed site on the Charles River at the dam. The President then introduced Mr. Bradford Washburn, the director of the museum, who described the project and showed slides of the location and the proposed buildings. He pointed out the advantages of the location, the available parking space and easy transportation facilities. Dr. Kickham moved that the committee be given authority asked for and to report back to the Council. The motion was seconded, and it was so voted.

The President presented the report of the Committee on Tax-Supported Medical Care. Dr. Hornor said the original fees had been increased and moved the approval of his committee recommendation. The motion was seconded, and it was so voted.

The President presented the report of the Committee on Legislation, and it was accepted as informational.

The President presented the report of the Committee on National Legislation, which was accepted as informational.

The President presented the report of the Committee on Publications and it was accepted as informational. (The publication of the *Directory* had already been approved in the budget for 1949.)

The President presented the report of the *New England Journal of Medicine*, which was accepted as informational.

The President submitted the report of the Committee on Arrangements. It was accepted as informational.

The President presented the report of the Committee on Ethics and Discipline and pointed out that the committee had reaffirmed its approval of the code of the Eye and Ear Infirmary. Dr. Curley moved acceptance of the report. Dr. Dame asked if the Council would be asked to approve every such code, and the Secretary thought this code was set up as a standard, which would be acceptable to the Society. Dr. Curley's motion was seconded. Drs. Dame, Munro and Welch expressed disapproval of the code on the grounds that it would allow an institution to circumvent the code of ethics of the Society. Dr. Munro moved that the motion be amended to the effect that the report be accepted, but that lines 5 to 14 of page 8 be disapproved. This motion was seconded, and it was so voted.

The President presented the report of the Committee on Medical Education, which was accepted, and its nominations for recipients of the awards were approved.

The President introduced Dr. Jankelson, who presented the report of the Advisory Subcommittee on Medical Education and stated that the area of agreement on the committee was large and the area of disagreement was narrow. (Dr. Gardner was not present to present his views.) All except Dr. Gardner believed that the proper certification body was the Board of Neurology and Psychiatry, and all were agreed that licensure by the Commonwealth to practice clinical psychology should not be supported at this time. The Secretary moved approval of the majority report of the committee. The motion was seconded, and it was so voted. It was then moved and seconded that the lines 11 to 22, page 12, of the minority report be disapproved. It was so voted.

The President introduced Dr. Roy Ward, who presented the report of the Committee on Public Health. Dr. Maclachlan moved that the committee's endorsement in principle of the limited investigation of the use of BCG vaccine be approved. The motion was seconded, and it was so voted.

Dr. Munro then moved to approve in principle the recommendation that more emphasis be placed on education in the subject of nutrition on the undergraduate and graduate levels. This motion was seconded, and it was so voted.

Dr. Munro moved to approve the committee recommendation concerning pilot clinics beginning on line 14, page 13. The motion was seconded.

Dr. Getting then pointed out that the project would be a joint effort of the Society, the hospital association, the community hospital, the Cancer Society, the Heart Association and others, including the Department of Public Health. The clinics could evaluate the health screen, which is now restricted to separate groups. The clinic would help combat socialized medicine. It would co-ordinate the efforts of voluntary groups. The clinic would do no diagnostic work, but the report would go to the family doctor for diagnosis and treatment. X-ray study would probably be limited to chest films. The clinic would be in a community hospital, and the doctors would be paid. The clinic would be publicized as a joint effort in the local newspapers. The size of the city would be determined by the groups or committee conducting the study. The project is the result of study including Dr. Magnuson's report on a national level. There would be no charge at the clinic, but opportunity would be given for contributions. Dr. Getting said patients would be referred to the clinic by physicians. Dr. Merriam said that the heart clinic in Framingham was going well, was doing a lot of good and was without objection from doctors.

Dr. Ward said the clinic would be carrying out the policies of the American Medical Association. Dr. Getting said all that was asked for was approval in principle and not for the approval of a specific plan. Dr. Lynch said the plan tied in with the report of the Committee on Diabetes and the Committee on Industrial Health, and he was strongly in favor of it. Dr. Reardon put the question to a vote, and the motion was carried.

Dr. Curley moved the endorsement in principle of the recommendation concerning local health unions and centers. The motion was seconded, and it was so voted. The Secretary then moved approval of the resolution beginning on line 31, through line 43, on page 13. The motion was seconded, and it was so voted.

The President then presented the report of the Committee on Medical Defense as informational, and it was accepted.

The President then presented the report of the Committee on Industrial Health with its resolution. The Secretary moved the acceptance of the report and approval of the resolution beginning on line 25, page 17. The motion was seconded, and it was so voted.

Dr. Munro moved the approval of the resolution beginning on line 31, page 17. The motion was seconded, and it was so voted.

The President presented the report of the Committee to Meet with the Massachusetts Hospital Association as informational, and it was accepted.

The President presented the report of the Committee on Maternal Welfare, which was accepted as informational.

The President presented the report of the Committee on Postgraduate Education, and it was accepted as informational.

The President presented the report of the Committee on Medical Economics as informational, and it was accepted.

The President presented the report of the Committee to Make Recommendations as to Future Directors of Blue Shield. The Secretary moved that the nominations submitted be approved. The motion was seconded, and it was so voted.

The President presented the report of the Committee on School Health, and it was accepted as informational.

The President introduced Dr. C. J. E. Kickham, who presented the report of the Committee on Blue Cross–Blue Shield problems. Dr. Kickham moved that the Executive Committee approve the recommendation beginning on line 19, page 23. This motion was seconded.

There ensued a long discussion concerning whether or not this matter was one of public relations or one for the Blue Shield local committees or the Committee on Blue Cross–Blue Shield problems. It was brought out in the discussion that complaints about excessive fees were not too many, but they were widespread and applied not only to Blue Shield cases but also to others, and that it was the opinion of most of the committee that the allegations should be investigated and a remedy suggested as a public-relations project. The President put the motion to a vote, and it was carried.

Dr. Kickham then made a motion that the second recommendation, beginning on line 38, page 23, be approved in principle. The motion was seconded, and it was so voted without discussion.

Dr. Reardon then presented the report of the Committee on By-laws and Council Rules. The Secretary moved the approval of the report. The motion was seconded, and it was so voted without discussion.

The President presented the report of the Committee on Diabetes. It was moved and seconded to approve the report with its resolution. It was so voted without discussion.

The President introduced Dr. Harvey Kelly, who presented the report of the Committee on Veterans Affairs. He stated that it was the intention of his committee to have the material printed in the *Journal* for information to doctors. Dr. John Curley and Dr. Donald Munro objected because they believed this might be interpreted as interference by the Society in the practice of medicine by our doctors. Dr. Munro moved that the report beginning on line 31, page 25, through line 47 be disapproved. The motion was seconded, and it was so voted.

Dr. Munro moved that the first word "lastly" be deleted. The motion was seconded, and it was so voted without discussion.

Dr. Munro then moved that the next recommendation of the report be approved after changing the fifth word in line 1 from "these" to "this." The motion was seconded, and it was so voted.

Dr. Munro then moved that the last recommendation beginning on line 3, page 26, be disapproved. The motion was seconded, and it was so voted.

The President then introduced Dr. Hubbard, who presented his report and moved its acceptance as informational. The motion was seconded, and it was so voted.

A motion to adjourn was made and seconded, and it was so voted at 5:15 p.m.

H. Quimby Gallupe, *Secretary*

APPENDIX NO. 3

Joint Report of the Committee on Public Relations and the Committee on Medical Economics

The following principles were adopted on February 9, 1949, by the committees on Medical Economics and Public Relations of the Massachusetts Medical Society and a group of the staff of the Massachusetts General Hospital for presentation at the meeting of the Planning Committee of the American Medical Association on February 12, 1949:

1. We believe that the health of the people served by pre-payment insurance plans will be most benefited by medical care free of government administration and control.
2. We should like to call attention to the profligate waste and duplication in health programs operated by the Government in regard to both hospital beds and personnel as reported by the Hoover Commission. We believe that compulsory health insurance operated by the Government would result in similar inefficiency.
3. We believe that the manner of expression of policy on the part of the American Medical Association has served to diminish public confidence in that body to the serious concern of many of the members of the association.

We believe that the policy of the American Medical Association should be one of more active and enthusiastic support of constructive proposals for more equitable distribution of medical care.

Therefore, we suggest as constructive proposals worthy of support the following:

1. The objective of adequate medical care in our free society is to make available to everyone — regardless of race, color, creed, financial status or place of residence, every known essential preventive, diagnostic and curative medical service of high quality. The attainment of such medical care must necessarily be an evolutionary process which will require the co-operation of all concerned over a period of years.
2. The principle of voluntary prepayment health insurance should be the basic method of financing medical care for the large majority of the American people, in order to remove the burden of unpredictable sickness costs and abolish the economic barrier to adequate medical services.
3. The success of any plan for medical care is dependent on the mutual co-operation of the public, those rendering professional services and the administrative agencies. This co-operation can be obtained *only if those rendering* the services are convinced that they will have a continuing authoritative *voice in the formulation* and execution of policies and plans, thereby assuming their proper *share of responsibility.*
4. Voluntary prepayment group health plans, embodying group practice and providing comprehensive service, when practicable, offer to their members excellent medical care. Hence such plans should be encouraged.
5. The people have the right to establish voluntary prepayment plans on any basis guarded by legal restrictions necessary to assure proper standards and qualifications.
6. Provision of adequate medical care for those unable to obtain it by voluntary prepayment plans or by direct payment is the responsibility of the local or state government. Part of the burden of this responsibility may be assumed by charitable agencies. Federal grant-in-aid

to state programs administered by state boards of health is an acceptable method of helping to meet this responsibility.

7. The medical care of those who are able to purchase it by voluntary prepayment plans or by direct payment is the responsibility of the individual.

8. The federal Government, should, whenever possible, support voluntary prepayment programs for hospital and medical care.

9. Eligibility for receiving benefits under a program aided by federal grants should be determined by the individual states or communities.

10. The patient shall have free choice of his physician, group of physicians, clinic or hospital from among those participating in any plan, provided that the physician, group of physicians, clinic or hospital shall have the right to refuse or accept the patient.

11. Physicians and other qualified persons rendering medical care shall receive adequate remuneration for their services.

12. The physician shall be free to elect or reject without prejudice participation in a medical care plan. The rights of the physician as to the choice of methods by which he is to be paid shall be fully protected.

13. We agree that the federal Government now should subsidize medical and nursing education, medical indigents, health and diagnostic centers, including mental, where not now adequate.

We believe effective organizations of state and district health councils would immeasurably improve the community concept of local health needs. The initiative of the people themselves, and especially of the medical and public-health personnel, must provide the spark.

14. The Massachusetts Medical Society looks upon these basic principles as essential to the development of any successful medical-care plan and, as guides by which to evaluate medical-care plans that may be proposed in the future, with the understanding that changing conditions may require their later revision.

We further urge that our delegates to the American Medical Association be instructed to press for the general adoption of the above principles and proposals by the American Medical Association.

HAROLD R. KURTH
ELMER S. BAGNALL

APPENDIX NO. 4

REMARKS OF DR. MCCANN

By and large, the adoption of these wholly admirable provisions, except for one of them, will place us in a proper and enlightened position toward the Government and the public.

I question the propriety of Proposal No. 4, page 2, lines 5, 6, 7 and 8, which by description of a consumer co-operative mechanism and by use of the word "encourage" in line 8 would maneuver us into what is tantamount to public approval of the consumer co-operative movement. I think we should take some stand concerning it, but not to give encouragement or approval.

The composite memory of any group such as the Council reminds me of an old knife thrown into the corner of a drawer — it gets rusty, loses its edge and does not cut well any longer. However, there are those of us who have served you for ten long years on the firing line in medical economics, whose memories have been kept keenly sharpened while laboring in the field of prepaid medical care.

Why, with Proposal 4, should the Massachusetts Medical Society give approval to the consumer co-operative movement in medicine? With meaningless provisos about advisory medical committees (shades of the Wagner–Murray–Dingell Bill!) our profession would be subordinated in such organizations to the bargain-seeking propensities and controls of the lay consumer groups on their own strict terms, or to self-appointed medical managers who probably would be less desirable to bargain with.

The consumer co-operative record is not beyond scrutiny. Their philosophy is essentially that of socialism, although called euphemistically economic democracy, with the organized consumer group dominating and controlling the private medical entrepreneur directly rather than indirectly through governmental agencies. Their record is not unimpeachable. Their business projects are strewn with the story of use of all the devices ascribed to *laissez-faire* capitalism price-cutting, tie-in-sales, misrepresentation, monopoly practices — for putting private enterprise out of business. They have used monopoly to break monopoly and then continue themselves to monopolize.

The co-operative's achievements on health matters should be carefully scrutinized.

The White Cross of Massachusetts, after much fanfare and publicity, enrolled a few thousand subscribers, paid doctors 13 cents on the dollar, and then folded up because their lily-white idealists had left for the wars. What the color was of the other boys who went to wars, or of us who stayed behind, I have never found out. Several leaders of this defunct White Cross are on public record in support of compulsory health insurance. One should watch this trend as the record unfolds.

The Group Health Co-operative of Washington, D. C., after many long years finally reports an enrollment of the magnificent total of 24,000 subscribers; there is available their growing list of exclusions and restrictions of services; there is the record of continued use of it by those in the most satisfactory income brackets. A post-mortem examination in this case when it comes will be an interesting study on the anatomy of failure. Of course, under the leadership of Harry Becker, of which more later, they will support compulsory health insurance.

In New York City with the help of considerable endowment, HIP for the moment has had some measure of success under Dr. Dean Clark, who recently came to our hospitable shores, and who, while in the Public Health Service, is said on qualified authority to have been quite sympathetic to compulsory health insurance.

The small co-operative at Elk City, Oklahoma, under Dr. Shadid, is shown by accountant studies to be kept solvent in large measure by the payment for service in the traditional manner, by large numbers of nonmembers from the surrounding areas who use these facilities. Presumably Dr. Shadid and Harry Becker, incorporators and directors of the Co-operative Health Federation of America, subscribed to the unanimously adopted resolution from the parent organization, the Co-operative League of the United States of America, which was presented by a Mr. Hansen to a Congressional Committee September 9-11, 1946. The resolution read in part:

> To this end it supports nationwide health insurance under public auspices, provided that any proposed government action in this field provided for the continued expansion of volunteer co-operative health and medical care plans — and the making of Federal loans to consumer sponsored groups for hospitals, clinics and equipment.

The whole medical co-operative philosophy and movement seems to have stemmed from Michael Davis, the presiding genius over the drive for compulsory health insurance; from his lesser shadow, veterinarian Nathan Sinae, who aided and abetted the effort to install compulsory health insurance in Hawaii before it should achieve statehood, from Kingsley and Boas, who currently seem to be striving for control of a segment of the New York Medical Society with extravagant promises of things to come — and who of course support compulsory health insurance; and from a charming feminine agent of a Detroit automobile union, who a few years ago challenged me with the startling and arresting words spoken in a strange, unrecognizable, guttural accent, not indigenous to any part of America, at a conference in Ann Arbor sponsored by Michael Davis and his veterinarian Nathan Sinae, "How dare you talk such individualism when we all know that America and the rest of the world is going collectivist!"

As a physician steeped with some others in a modest but real achievement in construction of a multi-million dollar prepayment enterprise, as one who was trained in group medical practice, as one who has practiced both on a group and an individual basis, as one who has studied and written medical care contracts based on sound actuarial and labor-management-professional background, I charge that it is time to discredit the unrealistic, fantastic, ideologic shibboleth of the co-operatives, that all at once we must throw together, as a blanket to cover the face of our diversified America, the three debatable facets of current medical

economics: prepayment for medical care; group practice; and comprehensive service.

Gentlemen, if you will read proposal 4, lines 5, 6, 7 and 8, in them you will see that the co-operatives seek as late as 1949, when there are increasing signs of impending victory for our philosophy and methods, to strike you in an unguarded moment from your present vantage point. Truly our columnist Bill Cunningham painted a true picture, if we accept this proposal, when he wrote "We seem to have an exquisite genius for getting things fouled up past any explaining, understanding, or unraveling, and, generally, at the most inopportune times."

To clarify our position both philosophically and strategically, I offer the following amendment to be substituted for lines 7 and 8 of Proposal 4. It is based on ten years of experience across the country. It lets the co-operatives go their way while we go ours. But it certainly does not give them approval or a euphonius "encouragement." It states the position of the Society taken under Dr. Phippen, president, when White Cross Co-operative started in Massachusetts; the position followed in succession by Dr. Lanman and myself as chairman of the Massachusetts prepayment enterprise on advice of doctors from Washington, D. C., who were embroiled in the Supreme Court fiasco.

I move that, leaving intact lines 5 and 6 of Proposal 4, page 2, we amend lines 7 and 8 to read as follows:

> . . . sometimes offer their members adequate medical care. No such plan shall be obstructed in procuring enabling legislation. No physician participating in such a plan shall be denied, by reason of participation per se, (1) membership in established medical societies; (2) hospital-staff appointments dependent upon such society memberships; (3) consultation courtesies by nonparticipating physicians on the usual plane of ethical relationships.

If the common-sense policy enumerated herein had been followed by American medicine for the past ten years, we should not have landed in the courts; we should not be subject to tactics seeking to extract from us approval of consumer co-operatives; we should have been spared 80 per cent of our difficulties; and we should be today in a much better strategic position before the people of our country.

APPENDIX NO. 5

Committee on Tax-Supported Medical Care

As a result of conferences with Mr. Charles Dunn, attorney of the Massachusetts Medical Society, and study of the law covering veterans' services it was learned that the fees for veterans' services are fixed by the Commissioner and may be paid only in accordance with the Commissioner's regulations concerning prior authorization, emergency and so forth. The one exception to this is explained in the following quotation from a letter from Commissioner O'Day:

> The city or town is granted the privilege of paying aid in addition to what the Commissioner may authorize. When this is done that increase must be borne entirely by the place of settlement. If there are extenuating circumstances in a case, and the city or town wishes to pay more than we have originally authorized, and they clarify the situation, I usually meet that situation by increasing our allowance, but this would not apply to medical expense. Medical expense is always considered separate from the budget that is allowed for support and care.
>
> This part of the law gives the Commissioner the right to determine any amount which he considers proper and lawful. The question before you, I presume, is whether a city or town would not have the right to pay in addition to the schedule that I have set up, and to that I would say that they have that right, but any amount that they pay over and above our schedule would not be shared by the Commonwealth. I presume that there are some towns that will probably pay higher than my schedule, but if they do, the amount they pay in excess of my rate will have to be their responsibility.

After considering the above, two members of the Committee on Tax-Supported Medical Care conferred with Commissioner O'Day with the result that he is willing to change the directive to permit the following changes:

> Note these changes, kindly refer to Page 2 of my Medical Directive. *Fee Schedule.*
>
> Home Visit change to $4
>
> Office Visit change to $3
>
> Below entitled *Night Calls* $1 additional to $2 additional and change time limitations from between 9 p.m. and 7 a.m.

The Committee on Tax-Supported Medical Care recommends to the Council that it approve the fees for veterans' services as recommended by the Commissioner of Veterans' Services for the present.

Frederick S. Hopkins
Francis P. McCarthy
Frank W. Snow
Albert A. Hornor, *Chairman*

APPENDIX NO. 6

Committee on Legislation

The Legislative Committee has held several meetings during the year and has considered many bills of importance to medical practice. Our most important effort was directed toward the defeat of the chiropractor bill, which would have established a board of registration for chiropractors in the Commonwealth. This bill was heard before the public-health committees, and aside from our regular speakers several district presidents responded to our request and spoke in opposition.

Definite action was also taken on the vaccination, vivisection and open-hospital bills and on a bill to exempt the Blue Shield from taxation, and opposition was made to several bills proposing further legislation to allow future graduates of substandard medical schools to take examinations before the Board of Registration. Bills before the national Congress such as S5 are in the hands of the subcommittee on national legislation.

The committee believes that the physicians of the Commonwealth should present a united front in making recommendations to committees of the Legislature. This committee makes a careful study of all bills having important medical significance and arranges to make appearances before committees of the Legislature when they hear such bills. While it is the privilege of any individual to express himself at these hearings, it is confusing to the committees of the Legislature to have groups of physicians appearing on both sides of the same question. This committee will be glad to discuss proposed legislation with those who are to make appearances in order that they may understand the reasons for the position that this committee takes.

It has been suggested that a poll of the action of the legislators on important medical bills be published in the *New England Journal of Medicine.* It has been the opinion of this committee that such publicity is unwise because of its danger of antagonizing individual legislators to future bills in which we may have an interest. Such information is usually in the hands of the committee and may be obtained through the district legislative councilors.

The personal contact between physicians and their representatives in the General Court is the most important influence in guiding legislation and is of more importance than the formal appearance that we make at the State House. We urge that each district society arrange to have local physicians interest themselves in the work of their senators and representatives so that they may build up a friendly basis for the future discussion of important bills relating to the public health and the practice of medicine.

Alfred L. Duncombe
Curtis C. Tripp, *Co-chairmen*

APPENDIX NO. 7

Subcommittee on National Legislation

At a meeting on February 17, 1949 the available bills on health legislation were screened. It was voted to favor in principle:

(1) S 522 and similar bills for Local Health Units, provided the services were delineated; (2) HR 323 and

similar bills for Hospital Construction; (3) HR 1779 Scholarship Loans to Medical Students, provided the enactment was placed under the Surgeon General of the Public Health Service instead of the Department of Education; and (4) HR 12 and similar bills for a National Science Foundation. It was considered that the several bills relating to cancer, arthritis, and multiple sclerosis could be best handled under a National Science Foundation rather than enacted individually.

It was voted to oppose: (1) S 5 and all bills dealing with compulsory health insurance; (2) HR 1512 Chiropractors in Veterans Administration; and (3) HR 1570 Health of School Children in its present form. In regard to establishing a Secretary of Health, Education, and Security (HR 184 and HR 782) it was considered that a single secretary of health as advocated by the American Medical Association was preferable, but, if this goal proved unobtainable, HR 184 was favored provided that the undersecretary of health was a physician, and HR 782 was opposed.

DAVID L. BELDING
VLADO A. GETTING
CHARLES G. HAYDEN
DONALD MUNRO
AUGUSTUS THORNDIKE
ELMER S. BAGNALL, *Chairman*

APPENDIX NO. 8

COMMITTEE ON PUBLICATIONS

The Committee wishes to report on the publication of *The New England Journal of Medicine* for the year 1948. The year was marked in all parts of the country by difficulties in the publication of medical journals. Costs have increased, and the revenue from advertising decreased. A majority of the state journals suffered a drop in income from advertisements procured through the Cooperative Medical Advertising Bureau of Chicago. *The New England Journal of Medicine*, however, experienced an increase of 23.8 per cent from this source. The cost of paper rose from $11.55 per cwt. to $12.60. A new contract for paper at this rate was signed in September, with assurance of benefit of any drop in the general price of paper. The printing contract for 1949 was renewed at the 1948 rate, subject to renegotiation in the event of another increase in printers' wages.

General expenses for 1948 were $269,018 — an increase of $28,388 over 1947. The Pension Fund and Social Security taxes account for approximately $6500 of this amount — and the fact that there were 53 publication dates in 1948 in contrast to the usual 52 added $3500 to the cost of publication.

Revenue in 1948 was $267,101 (in addition to which $5000 was received from the Society) — an increase of $27,553 over 1947. The net loss for the year 1948 was $1,916.18.

The total circulation as of the end of December, 1948, was 24,770. The breakdown of this figure is as follows:

Regular subscribers	14,266
Student subscribers	3,725
Massachusetts Medical Society	5,942
New Hampshire Medical Society "once-a-month"	292
New Hampshire Medical Society "regular"	223
Exchanges	193
Complimentary	59
Advertisers	70
Total	24,770

During the year 1948 the Editorial Board considered 352 manuscripts, of which 170, or 48 per cent, were accepted. This was 46 more manuscripts than in 1947, when 64 per cent were accepted. This indicates a healthy condition and allows greater discrimination in the selection of articles for publication.

The accounts for the year have been audited by Hartshorn and Walter, and a copy of their report is on file in the Treasurer's office. An abstract of the report is appended.

Because of the uncertainty in costs of publication, the Committee requested an appropriation from the Society of $10,000 for the year 1949, which was included in the budget adopted by the Council at its meeting on February 2, 1949.

Dr. Garland has now been editor of the *Journal* for a full year. His conduct of its affairs has more than justified the confidence in him that was felt at the time of his appointment and augurs well for the future.

The secretary of the Society informs us that there is urgent need for a new Directory. Money for its publication was included in the budget adopted by the Council on February 2, 1949. We recommend that the Council order the publication of a Directory of the Officers and Fellows.

As you will see from the program of this meeting, the Shattuck Lecture will be delivered by Dr. Paul Dudley White, of Boston.

OLIVER COPE
JOHN FALLON
JAMES P. O'HARE
CONRAD WESSELHOEFT
RICHARD M. SMITH, *Chairman*

ABSTRACT OF AUDITOR'S REPORT

Expenses:	
Publication of *Journal*	$183,994.83
Publication of reprints	12,282.46
Office and other salaries	40,547.03
Commissions, fees, etc.	16,828.42
Office and sundry expense	8,865.66
Pension fund	3,491.10
Social Security taxes	3,008.56
Total	$269,018.06
Revenue:	
Advertising	$144,480.86
Engraving	595.70
Reprints	11,882.18
Subscriptions (other than M.M.S)	107,264.57
Miscellaneous	2,878.57
Total	$267,101.88
Net loss to Massachusetts Medical Society	$1,916.18

APPENDIX NO. 9

COMMITTEE ON ARRANGEMENTS

The program that the Committee presents for the annual meeting is essentially its final report, since it represents the results of our work during the past year.

It is gratifying that so many of our members from the central and western parts of the State have consented to participate in the scientific program. To all these gentlemen, as well as to those who are coming to us from a distance, the Committee extends its thanks.

We again acknowledge the co-operation of the Worcester District Medical Society, whose attention to innumerable details of arrangement that do not appear on the surface but are essential for success has been of inestimable help.

Members of the Society are reminded that the commercial exhibits are the principal source of income for the annual meetings and are urged to visit them frequently.

FRANKLIN G. BALCH, JR.
GORDON DONALDSON
ALBERT EHRENFRIED
JOHN W. NORCROSS
HAROLD G. GIDDINGS, *Chairman*

APPENDIX NO. 10

COMMITTEE ON ETHICS AND DISCIPLINE

The "deadline" for submission of the annual report of the Committee on Ethics and Discipline necessitates an incomplete summary of our labors. At the present time, 3 cases of a rather serious nature are being investigated, formal action to be taken later.

The work of the Committee during the year has been concerned with the usual list of complaints against doctors for suspected improper treatment of cases, complaints of fellow against fellow of violation of the code of ethics and requests for guidance in ethical procedure. Of the complaints against fellows by laymen, all but one was decided in favor of the fellow concerned. In this isolated case, the fellow was found guilty of unethical conduct, was reprimanded by the Com-

mittee and ordered to make restitution to the patient. This case is of interest because it is a repetition of a similar episode in which he was concerned a few years ago. The case is placed on file pending his future conduct.

In the cases of fellow against fellow, all but one of those accused were found guilty, reprimanded by the committee and requested to apologize to the offended brother. These cases were considered closed. In the remaining case, the offending fellow, while not found actually guilty of any infraction of our code of ethics, was adjudged guilty of conduct unbecoming a gentleman and a member of the Massachusetts Medical Society. A letter of severe admonition was sent to him, and his case was placed on file pending his future conduct.

The requests for information regarding ethical procedure varied from information concerning advertising, procedure in appearances in court and also procedures that involved public relations. In general, the advice was given by the chairman and approved by the Committee at the following meeting.

In furtherance of the interest shown by the Society in better public relations between the laity, the press and the medical society, every request for advice on matters pertaining thereto has been given special consideration by the Committee on Ethics and Discipline.

It was with that thought in mind that the Committee approved of the code of ethical conduct sponsored by the Eye and Ear Infirmary of the Massachusetts General Hospital, recently. The Council, at its meeting on February 2, 1949, returned approval of the code to the committee for reconsideration. This matter was discussed at the meeting of the Committee on Ethics and Discipline on February 16, and the committee unanimously reaffirmed its approval of the code of the Eye and Ear Infirmary as printed on page 2 of the circular of advance information to councilors, in advance of the Council meeting on February 2, 1949.

WILLIAM J. BRICKLEY
ARCHIBALD R. GARDNER
FRED R. JOUETT
ALLEN G. RICE
RALPH R. STRATTON, *Chairman*

APPENDIX NO. 11

COMMITTEE ON MEDICAL EDUCATION

In accordance with your request, the Committee on Medical Education has communicated with the deans of the three medical schools in Boston and asked them to nominate a fourth-year student to receive the Massachusetts Medical Society prize.

We requested the deans to nominate a student "who best exemplifies those intangible qualities which serve to designate him as the good physician."

The nominations from the deans were as follows:

Boston University — Sylvan B. Baer
Harvard University — Henry S. Harvey
Tufts College — William H. Ellswood

The Committee, therefore, recommends that these nominations be seconded and approved.

JAMES M. FAULKNER
GEORGE D. HENDERSON
ISAAC R. JANKELSON
ROBERT T. MONROE
CHESTER S. KEEFER, *Chairman*

APPENDIX NO. 12

ADVISORY SUBCOMMITTEE ON MEDICAL EDUCATION

The following letter from Herbert I. Harris, M.D., and a mimeographed copy of a progress report to the membership of the Massachusetts Society of Clinical Psychologists from the committee on licensing and certificates of psychologists was referred to this subcommittee for consideration.

Dr. H. Quimby Gallupe
Secretary, Massachusetts Medical Society
8 Fenway
Boston, Massachusetts

Dear Dr. Gallupe:

I enclose for your consideration a progress report of the Massachusetts Society of Clinical Psychologists which is self-explanatory.

It has occurred to me that the present-day interest in the activities of clinical psychologists is such that our Society should be very much aware of what the ethical clinical psychologists are attempting to accomplish in obtaining certification. All those ethical clinical psychologists with whom I have had occasion to talk are agreed that they desire to (a) prohibit the private practice of psychotherapy by clinical psychologists and (b) when clinical psychologists attempt psychotherapy, to insure that adequate psychiatric and medical safeguards and provisions have been provided. You will notice that in this progress report no mention of the exact nature of what the clinical psychologists plan to do in practice is set forth.

It seems to me that the Medical Society would be of considerable help to the ethical clinical psychologists in making sure that a fairly watertight certification law be established, in such fashion that the measures I have outlined above will be included, and that clinical psychologists who are ethical and do wish to work with and under the supervision of psychiatrists have that opportunity.

I am sure you are aware of the fact that many emotional disorders which independent clinical psychologists might attempt to treat often mask an underlying physical disorder, which can on occasion be extremely grave.

I should very much appreciate your views on this entire matter and stand ready to be of any assistance I can to your Legal Committee.

(*Signed*) HERBERT I. HARRIS, M.D.

20 Lowell Street
Cambridge, Massachusetts

An analysis of the preliminary report shows that 70 per cent of the members of the Massachusetts Society of Clinical Psychologists voted for certification of clinical psychologists by this state on a state level. They are fully aware of the necessity of high standards for such certification and the desirability of uniform legislation in the various states.

From other data available to this subcommittee it appears that the states of Virginia and Connecticut are certifying clinical psychologists and all psychologists respectively. Recently Kentucky passed a law, but because of certain ambiguities in it, it is not certain whether the law provides for certification or licensing of clinical psychologists. Legislation along these lines is pending in New Jersey and the District of Columbia. An attempt is now being made in Virginia to amend the law in favor of licensing clinical psychologists.

It becomes obvious that uniform legislation in all states is impossible, and therefore the standards of training and experience may vary a great deal in the various states.

For approximately two years committees of at least two national psychiatric societies have been deliberating upon the relation between psychiatrists and psychologists in general and clinical psychologists in particular. These committees are likewise considering ways and means to certify or license clinical psychologists on a national basis. To the best of our knowledge no constructive proposals have been made so far. In the meantime, as mentioned above, three states have passed laws to certify or license clinical psychologists and one other state and the District of Columbia are contemplating similar legislation.

Within the framework of the Council on Medical Education of the American Medical Association there are well established precedents for certification, on a national basis, of medical specialties and various other professions allied to the practice of medicine. Such boards of certification exist for surgery, internal medicine, neurology, psychiatry and so forth and for medical technologists, x-ray technicians,

medical librarians and others. They maintain high standards of education, training and experience for certification in their respective fields. A similar technic for certification of clinical psychologists would establish a uniformly high standard throughout the country. We suggest that such board should be under the guidance of the American Board of Neurology and Psychiatry and function with the approval of the Council on Medical Education of the American Medical Association.

We therefore recommend that

1. Certification of clinical psychologists by the American Board of Neurology and Psychiatry be approved. Certification by the State is disapproved.
2. Licensure by the State to practice clinical psychology is not supported by us at this time.

One member of this subcommittee, Dr. George E. Gardner, dissented from the above recommendations and will submit an alternate recommendation.

RAYMOND H. GOODALE
WILLIAM A. HINTON
C. GUY LANE
DONALD A. NICKERSON
AUGUSTUS THORNDIKE
I. R. JANKELSON, *Chairman*

MINORITY REPORT OF ADVISORY SUBCOMMITTEE ON MEDICAL EDUCATION

This problem of licensure and certification is a very complex one, and I might say that it is one that at the present moment is engaging the attention of numerous professional committees at the *national* level. For example:

1. There is a committee of the American Psychiatric Association called the Committee on the Relation of Psychiatry with Psychology. This committee at the present time is wrestling with this very problem of the training of the clinical psychologist, the function, with a view of emerging eventually with some suggestions regarding the ticklish problem of certification or licensure. In doing this it is working in close collaboration — in joint committee meetings, to be exact — with the Committee of the American Psychological Association on the relation of psychology with psychiatry. The memberships of both these committees are representative of the two disciplines, and the results of their work are being awaited by both groups.
2. There is also a committee at the national level — namely, the Committee on Clinical Psychology of the Group for the Advancement of Psychiatry — that is endeavoring to establish in collaboration with representatives from the American Psychological Association some fixed standards of training, Ph.D. requirements, experience and supervision and so forth that will be satisfactory not only to the psychiatrists but also to the psychologists. This committee is turning its attention to the very pressing problem of licensure and certification and is also not out of touch with the work of the committees noted above.
3. The psychologists themselves, through the recent establishment of their Board of Examiners for Professional Psychologists, have put through and are now enforcing rigorous standards for certification as a diplomate in clinical psychology. This in itself all assume to be a step in the right direction toward a national worthwhile plan.
4. And, finally, only yesterday Dr. Dael Wolfle, executive secretary of the American Psychological Association in Washington, through communications to me by way of Dr. William Menninger, president of the American Psychiatric Association, has called for a representative from psychiatry, together with representatives from the other disciplines involved, to meet together in a few weeks to definitely take steps to establish a uniform national procedure of certification of clinical psychologists — all psychologists in whatever capacity they may work directly with the public.

I have gone into the various steps taken by these various interested bodies of professional people so that it will be clear that there is at present much work being done toward a solution of this very important problem, and it seems to me that it would be much less precipitate if we at the local level should await the results and possibly the accepted program of the people working in the fields most affected. I say we should do this rather than put forth a statement that we favor any such thing as certification by the American Medical Association, its Council, or the Board of Neurology and Psychiatry and so forth. This whole problem of the function and role of the clinical psychologist is too complex to be settled merely by stating that these people (over 5000 of them as a matter of fact — most of whom have Ph.D. degrees) are to be considered "adjuncts to the medical profession" and thus to be classified and certified as technologists, technicians and librarians. The work of the psychiatrists on the above committees during the past two and a half years has convinced them that no such simple solution would suffice.

Therefore, in the light of the above, I suggest, that our committee go on record as stating:

> In view of the fact that well accredited bodies and committees of psychiatrists sponsored by their national professional organizations, working in close collaboration with representatives of the American Psychological Association, are at this time endeavoring to establish a nation-wide policy of certification and licensure of clinical psychologists, it is the opinion of this committee that any and all such steps toward licensure and certification at the state level in Massachusetts should await the results and suggestions relating to licensure and certification on a *national* level. While awaiting these programs, we are opposed to licensure and certification at the state level, feeling that such a plan would be premature, or inadequately formulated, or both.

I hope that some of these data will help clarify the issues for us, but if you and the rest of the committee feel that you do wish to go on record in the matter as outlined on Page 2 of your report referable to certification, may I ask you if you will omit my name from those of the committee who agree with these proposals. If my name were to be forwarded at all in connection with such proposals, I would like to have you list me as "dissenting," and if possible for the reasons outlined above.

GEORGE E. GARDNER

APPENDIX NO. 13

COMMITTEE ON PUBLIC HEALTH

The Public Health Committee at its November 15 meeting heard a presentation by Dr. Monroe of certain problems with respect to the care of the aged. The Committee at its March 2 meeting endorsed once again the program of Dr. Monroe and voted that this endorsement be brought to the attention of the Council. Dr. Monroe's discussion before the Committee was as follows. He pointed out that of the approximately 100,000 persons in this state over age sixty-five, a third were independent and working, a third were independent owing to insurance, and a third were dependent upon charity of one type or another, or some form of social security. He stressed the need for improving the professional standards in so-called nursing homes and boarding homes. He described to the Committee his model home for the aged, which would include such services as employment, rehabilitation, teaching, recreation, preventive medicine, and even the provision of part-time housekeeping to the aged persons in their own homes.

At its November 15 meeting the Committee also adopted the following motion, which, it voted at its March 2 meeting, should be brought to the attention of the Council. "This committee endorses in principle the limited investigation of the use of BCG vaccine in tuberculosis contact families in certain districts of Boston by the Tuberculosis Division of the Boston Health Department in collaboration with the U. S. Public Health Service and the State Health Department subject to the approval of the Massachusetts State Department of Health."

At its March 2 meeting the Committee adopted the following motion. "This Committee recognizes the importance

of Nutrition in Health and recommends that greater emphasis be placed on education in this subject on the undergraduate and graduate medical levels." It is desired that this motion be brought to the attention of the Council for its information.

After considerable and prolonged discussion, the Committee adopted a motion as follows:

> It is the opinion of the Committee that pilot clinics should be held in pivotal localities throughout the State to offer, on a voluntary basis, health examinations under the auspices of district medical societies in co-operation with the community hospital and other interested groups. The findings of these examinations, it is recommended, would be referred to the family physician. This committee further recommends that a subcommittee of the Committee on Public Health be appointed to carry out this program, that this subcommittee be made up of one representative from each district and that this subcommittee have power to act. It is the desire of this committee that this motion be presented to the Council for action at the next meeting.

The Committee also recommends that the Council adopt the following resolution: "That positive efforts toward the establishment of local health unions and health centers be actively supported by the individual members of the Massachusetts Medical Society."

The Committee also passed the following resolution: "Whereas the Massachusetts Medical Society has already approved an attempt to find the undiagnosed diabetic patients of the Commonwealth and bring them under treatment, and whereas representatives of a large number of industries in the state have expressed a desire to co-operate with efforts directed at the discovery of latent diabetes in order to secure early treatment, be it resolved that the Council of the Massachusetts Medical Society recommend suitable action by the officers and committees of the district medical societies to carry out such programs aimed at the discovery of diabetes in the community consistent with the Diabetes Detection Program and Diabetes Week sponsored by the American Diabetes Association."

It is requested that you bring this resolution to the attention of the Council for action. It is our understanding that a similar resolution will be adopted for Council action by the Committee on Industrial Medicine and by the Committee on Diabetes. We believe it is Dr. Root's desire that this resolution be presented to the Council as a joint resolve of the three committees.

JOHN J. POUTAS
WARREN R. SISSON
LAWRENCE J. SMITH
CONRAD WESSELHOEFT
ROY J. WARD, *Chairman*

APPENDIX NO. 14

HEALTH-PROTECTION CLINICS

It is the desire of all voluntary health agencies of the medical, dental, nursing and hospital professions, of the hospitals and of the official health agencies to make available to all people every essential diagnostic, therapeutic and preventive measure of high quality. In recent years various screening technics have been made available for determining the probable presence or absence of a certain disease, such as diabetes, cancer, syphilis or tuberculosis.

Health agencies have been screening the public through clinics designed primarily for the application of one or, at the most, two of these procedures. It is our opinion that we are not making available to as many of the public as possible the composite benefits of all the screening technics applied at a single visit. It is possible to make these screening technics available, as well as a reasonably good history and physical examination, in a single visit to a health-protection clinic. The application of these screening devices in a single visit would not be subject to the same error that is now inherent in most of our screening programs — namely, that we screen the patient for one or more types of illness, thereby giving him a false sense of security in believing that he may be free from all other illnesses. This clinic would screen the patient for all illnesses for which we have an acceptable technic and, in addition, give him the benefit of having a history taken, a physical examination and a personal conference with a physician concerning further steps that he should take to safeguard his health.

Many voluntary health agencies, the professions engaged in the healing arts, voluntary hospitals and public-spirited citizens have become concerned about arguments raised by the proponents of socialized medicine that many people are not afforded proper medical care. The availability of these health-protection clinics would, in our opinion, provide an opportunity for private enterprise in co-operation with the Department of Public Health to make available to meet this apparent need of people who cannot otherwise afford to obtain health protection for themselves.

These clinics are for the purpose of finding the presence or absence of certain major illnesses that are some of the leading causes of death. The objective of the clinic is to examine persons referred by the family physician, clinics or other social agencies, by applying screening procedures, giving a physical examination and performing certain laboratory tests that would assure the person of his apparent good health. The clinic visit would be terminated by a personal conference with a physician who would instruct him about the proper follow-up study, including visits to his family physician or clinic if he cannot afford the former and obtaining the name of a physician to whom the final report will be sent. For certain health-protection purposes, such as dietary supervision for overweight, or in case of diabetes, follow-up services would be offered at the request of the family physician, or if there were no family physician, at the request of the clinic or other group caring for the patient.

This co-operative project between the medical profession, the voluntary hospitals, the cancer, tuberculosis, diabetic and heart voluntary associations and others would depend upon the following factors:

> The organization of a central guiding committee, which would elect an administrator who would be responsible for the operation of the program.
>
> Mutual sponsorship of such a program by the various groups who would participate both financially and in the promotion of the program.
>
> The development of a plan for the opening of a demonstration health-protection clinic, which might be used as a guide for developing others throughout the Commonwealth.
>
> The establishment of a plan and budget for the maintenance of this clinic by the sponsoring agencies under the direction of the administrator whom they would select.
>
> Direction of the public-relations program by the administrator and joint participation by all the agencies concerned. (In order to be effective, the program must be well publicized to the professions concerned as well as to the public.)

It is suggested that no charge be made for services rendered except that persons who are processed through the clinic might, if they wish, contribute to the support of the clinic any amount that they were able to pay up to the actual cost of the services rendered. All such funds would accrue to the advancement of the clinic and not to the participating agencies sponsoring it.

The Department of Public Health would not control this clinic in any fashion other than by licensing, but would be one of the sponsoring agencies.

The data collected at the clinic should be available to all the sponsoring agencies for scientific analysis, but the identity of patients processed in the clinic would be kept confidential and not made available to any of the sponsoring agencies.

It is the objective of the Department to present this proposed health-protection clinic to a group of agencies and individuals in the Commonwealth who may be interested in making available to the people of the Commonwealth these services. We believe that through these services, which would include a history, a physical examination, an x-ray film of the chest, a blood test and a Papanicolaou test for vaginal smears, we should be able to screen the presence of the major killers — namely, heart disease, cancer, diabetes, tuberculosis, nephritis and

hypertension — and other conditions that may lead to serious protracted illness, or disability, or even death.

VLADO A. GETTING
Massachusetts Commissioner of Public Health

APPENDIX NO. 15

COMMITTEE ON MEDICAL DEFENSE

Malpractice cases carried over from 1947	9
Cases disposed of in 1948	5
New cases in 1948	6
Cases pending as of January 1, 1949	10
Legal expenses, 1948	$3,730.00
Other expenses	None

The unusually large expenditure resulted from 2 cases that together cost $2184.33 ($1186.76 and $997.57). The first took a month in Superior Court, resulted in a verdict for the doctor and has been carried to the Supreme Court on appeal by the plaintiff. The second was primarily defended by an insurance-company attorney, but the Society also filed its own brief because of the importance of the questions involved. Trial resulted in a verdict against the doctor, but the Society was reassured by the court's statement that "Nothing contained herein need cause anxiety to an honest physician who administers narcotics to a patient in accordance with the prevailing standards of medical practice."

Although it is unlikely that such important demands will be made on this committee in 1949, it has still been thought advisable to increase the budget from $1500.00 to $2000.00 in order to give the treasurer a fairer picture of what can happen. This has been done, and it is the hope of the Committee that the increase will be returned unused at the end of the year.

EDWIN D. GARDNER
CHARLES J. KICKHAM
JOHN E. MORAN
WILLIAM R. MORRISON
HORATIO ROGERS, *Chairman*

APPENDIX NO. 16

COMMITTEE ON SOCIETY HEADQUARTERS

It is obvious that the present quarters of the Massachusetts Medical Society are not adequate for its purposes, and this committee has failed to obtain the building next to the Boston Medical Library.

There is an opportunity for the Massachusetts Medical Society to unite with the Boston Museum of Science, which has recently bought six acres of land in Boston on which to construct a new museum. The museum will include a planetarium and a Hall of Man.

On March 25, 1949, a meeting of the Committee on Society Headquarters was held. Present at this meeting, besides the members of the Committee, were Dr. Reardon, president, Dr. Gallupe, secretary, and Mr. Robert Boyd, executive secretary of the Massachusetts Medical Society. At this meeting, it was decided to ask the Executive Council of the Society for authority to explore the possibility of obtaining headquarters for the Massachusetts Medical Society, the Boston Medical Library, and the *New England Journal of Medicine* and to report its findings at a future meeting of the Council.

It may be possible, if we find it feasible, to unite with the Boston Museum of Science. This would give the Massachusetts Medical Society the opportunity to establish better public relations and to enhance the value of the doctor to his patient.

ALBERT A. HORNOR
DWIGHT O'HARA
WALTER G. PHIPPEN
GEORGE L. STEELE
FRANK R. OBER, *Chairman*

APPENDIX NO. 17

COMMITTEE ON INDUSTRIAL HEALTH

The inclusion by the American Medical Association in its program for the advancement of medicine and public health of a section devoted to industrial medicine is evidence, in our opinion, of the importance with which the House of Delegates of the Association now regards this specialty and a recognition, at long last, that industrial medicine, once an outcast and later the tolerated stepchild of the profession, has attained full status and dignity because of the indisputably valuable contribution it has made to the health and welfare of the largest segment of the nation's population in peace and in war and by reason of the professional character, integrity and standing of the men who nurtured and developed it over the last quarter of a century and overcame many obstacles by meritorious performance.

Section No. 11 of the American Medical Association's program is captioned "Industrial Medicine" and proposes, "Greater emphasis on the program of industrial medicine, with increased safeguards against industrial hazards and prevention of accidents occurring on the highway, home and on the farm."

Of course this program requires the talent and the aid of many ancillary services, of nurses and technicians, safety and mechanical engineers, chemists and physicists and so forth, but all these must be, as in the past, correlated and guided by the physician in industry whose concern is the health and well-being of people at work.

This program also requires the optimum of help and cooperation from the family physician and the surgeon to the end that the disabled worker may be restored to working capacity as fully and as promptly as possible.

It must be perfectly obvious that if our nation is to survive indivisible with liberty and freedom for all and at the same time carry on its back indefinitely more than sixty war-damaged or sick foreign countries it can be done only through sustained and increasing and efficient production of goods and services.

Such an achievement is unlikely in the event of any important breakdown in our nation's industrial health. It is, therefore, the job of industrial medicine working with the public-health and related services at all levels to endeavor to maintain the health of this nation's 60,000,000 working people and their families at a high level.

It should be unnecessary but it may be important to make it crystal clear at this point that industrial medicine is basically preventive medicine or health maintenance, a determined effort to keep well people well, and able and willing to work. Except in areas isolated from good medical care, in emergencies or other necessitous circumstances or legal edict, industrial medicine has no intention or desire to enter into the field of curative medicine.

In recent years our medical schools have taken cognizance of the importance of industrial medicine, and many of them have established postgraduate courses in industrial medicine. Because of its increasing importance it should, however, have its place in the undergraduate curriculum.

At the present time the American Medical Association is giving favorable consideration to recognition of industrial medicine as a specialty equal to surgery, internal medicine, neurology and so forth. To this end fellowships and residencies in industrial medicine are being established. The American Association of Industrial Physicians and Surgeons has sponsored such a fellowship at the University of Pittsburgh, and General Motors Corporation has established several in-plant residencies for training.

The American Association of Industrial Physicians and Surgeons now comprises upward of 2000 members, nearly all in this country. These are physicians who must devote full time or at least 50 per cent of their time to industrial medicine, must have so performed for five years and must belong to their local medical society to qualify for membership.

Across the country many more physicians engaged in industrial work full time or part time who are not members of the Association are unable to meet the qualifications or from choice.

The local component society of the national association, the New England Conference of Industrial Physicians and Surgeons, includes approximately 150 physicians in this area, chiefly in Massachusetts and Rhode Island, who devote all

or much of their time to industrial medicine. The quali fications for membership are the same as those in the parent association. Here again are many physicians doing some industrial medicine who are not members of the Conference.

The Boston Branch of the New England Association of Industrial Nurses is a component society of the American Association of Industrial Nurses, a very flourishing and active though relatively young organization designed for the development and professional advancement of nurses working in industry. Some of our colleges that conduct schools of nursing include industrial nursing as an important part of the curriculum and provide in-plant training.

It is apparent, therefore, that industrial medicine and industrial nursing have become an important department in both professions.

A recent survey made by the Division of Occupational Hygiene of the Commonwealth of Massachusetts in 654 industries employing 398,800 persons reveals the following information:

Number of physicians employed full time	19
Number of physicians employed part time	159
Number of physicians employed on call	416
Total	594
Number of nurses	829

As you are not unaware, organized labor has become concerned about the health of its members and many of them are now including medical service in their negotiable contracts. That is true especially in the United Mine Workers organizations, the Garment Workers Union, the power companies, the automobile industries and others.

As previously reported, the seventy-ninth Congress enacted legislation establishing a Federal Employees Health Service, which is a further recognition of the importance of industrial medicine. Units have been recommended for Boston by the United States Public Health Service but have not yet been organized.

Stimulated by workmen's compensation legislation for industrial accident and diseases to some degree the large industries and businesses throughout the Commonwealth are now providing a quite satisfactory medical service or health-maintenance program for their employees. As in every phase of medical practice, there is room for improvement in some of these services especially when employed nurses are not under responsible medical supervision.

It has been very difficult to introduce worthwhile health-maintenance programs in small industries. There are several reasons for this, among them fear of the cost, the uncertain economic outlook in the country, the uncertain demands from labor and a lack of medical men properly trained in industrial medicine. We are advised by the American Medical Association, Council of Industrial Health, that this condition exists all over the country and presents a challenge that nobody has yet been able to meet successfully. It will continue to be a problem for the earnest endeavor of this committee to solve with the help of other interested groups.

This committee wishes to recommend the adoption by the Council of the resolution submitted by the chairman of the Committee on Diabetes, which is a joint resolution by that Committee, the Committee on Public Health and the Committee on Industrial Health, for the detection of the patients with unrecognized diabetes in industry and in the community.

This committee also wishes to present the following resolution:

Whereas, industrial medicine has become an important part of the American Medical Association's Program for the Advancement of Medicine and Public Health and is being favorably considered by the Association for specialty status,

Be it resolved, that the Council of the Massachusetts Medical Society establish a section on industrial health so that this phase of practice may participate in the annual meetings of the Society with the other sections of the Society.

JOSEPH C. AUB
LOUIS R. DANIELS
JOHN G. DOWNING
HAROLD R. KURTH
FREDERICK N. MANLEY
HENRY C. MARBLE
DANIEL L. LYNCH, *Chairman*

APPENDIX NO. 18

COMMITTEE TO MEET WITH THE MASSACHUSETTS HOSPITAL ASSOCIATION

Last December, in response to many inquiries at the office of the Secretary as to the acceptance and degree of success of the Gallupe Plan previously approved by the Society, a questionnaire was sent each hospital in the Commonwealth through the office of each district secretary. All hospitals were included whether approved or not, private or public, large or small. The questions asked were:

1. Did or did not co-operate in the promotion of the Gallupe Plan?
2. To what extent?
3. How has it worked?
4. Have you any physicians on either the regular, courtesy, or supervised courtesy staffs who are graduates of unapproved schools?
5. How many?
6. How many have you accepted under the Gallupe Plan?
7. If nothing was done, why not?
8. Remarks.

Replies were received from 55 hospitals in 15 districts having a total bed capacity of approximately 7800. No state, federal or teaching hospital associated with a medical school participated. Twenty-seven, or approximately 50 per cent, have replied that they were co-operating in the promotion of the Gallupe Plan, and reported a total of 194 graduates of unapproved medical schools on their supervised courtesy staffs. All reported that the plan was working "well or satisfactorily." None reported unfavorably. Some complained of the time and effort required of the staff men who did the supervising. In some cases certain men have been promoted to the regular courtesy staff on the basis of their work and interest. Thirty-six hospitals reported a total of 270 graduates of unapproved schools on their combined staffs — usually the supervised courtesy staff. The largest number reported by any one hospital was 68, whereas others reported 27, 15, 15, 13 and 13 respectively.

The reasons most commonly given for not participating in the operation of the Gallupe Plan were: staff regulations; scarcity of beds, which prevented acceptance of all physicians of approved schools who had made application; many small hospitals in rural areas reported no demand from graduates of unapproved schools.

Even though the percentage of questionnaires returned is small, from the information given, by the hospitals where the plan is in operation, it appears that it has real merit, that the men selected have greatly appreciated the opportunity given them, and that the postgraduate teaching from clinics, staff meetings and supervised care of patients has helped make better physicians of these men who graduated from unapproved medical schools. We hope the plan will be adopted more generally.

EDWARD A. ADAMS
EDWIN D. GARDNER
FREDERIC HAGLER
JUSTIN E. HAYES
LELAND S. MCKITTRICK
DONALD A. NICKERSON
NICHOLAS S. SCARCELLO
ALBERT E. PARKHURST, *Chairman*

APPENDIX NO. 19

COMMITTEE ON MATERNAL WELFARE

During 1948 two meetings were held on February 17 and November 16. The following members of the Committee were present at one or both of these meetings: Raymond S. Titus, M.D., Arthur F. G. Edgelow, M.D., Richard P. MacKnight, M.D., Robert L. DeNormandie, M.D., and David D. Rutstein, M.D.; Arthur Hertig, M.D., and Miss Alice G. MacKinnon, R.N., were guests.

In co-operation with the Committee on Maternal and Child Welfare of the Department of Public Health, Common-

wealth of Massachusetts, it was decided that a study of maternal mortality should be conducted throughout the entire Commonwealth. Through the efforts of Dr. Florence McKay a sum of money was obtained from the Children's Bureau in Washington to finance this study, which will be directed by Dr. Luke Gillespie and Dr. Arthur Edgelow. It has been proposed that a review of maternal deaths be made during the year, and a representative committee will arrive at a decision whether these deaths were preventable or nonpreventable. Plans will be made to review this material periodically at meetings open to the general medical public.

JAMES M. BATY
ARTHUR F. G. EDGELOW
SAMUEL KIRKWOOD
FLORENCE L. MCKAY
LOUIS E. PHANEUF
RAYMOND S. TITUS
DUNCAN E. REID, *Chairman*

APPENDIX NO. 20

COMMITTEE ON POST-GRADUATE MEDICAL EDUCATION

Attention of the Society is directed to the fact that the work of this committee now includes the New England Post-Graduate Assembly, the directors of various post-graduate exercises carried on throughout the State and the conduct of the Sanders Theater Course.

New England Post-Graduate Assembly

This year the Assembly will meet at the Copley Plaza Hotel on November 9, 10 and 11.

Making full use of past experiences, the organization of various committees from this and other states has been accomplished. By vote of the program committee arrangements have been made to omit the various hospital clinics and in their place to devote a full day to television exercises, both surgical and medical. Other than this note of progress, there is no further report at this time.

Post-Graduate Medical Exercises — Fall and Winter 1948–49

At the outset it should be stated that as a result of a personal survey of the various teaching areas during the summer months, together with certain experiences early in the Fall of 1948, it seemed advisable to all concerned to make certain changes in the teaching framework. As a result, the teaching areas are as follows:

Area 1 — Pittsfield, North Adams, Great Barrington
Area 2 — Springfield, Holyoke
Area 3 — Greenfield, Turners Falls
Area 4 — Worcester
Area 5 — Fitchburg, Gardner, Leominster
Area 6 — Lowell
Area 7 — Lawrence, Haverhill, Newburyport
Area 8 — Taunton, Fall River
Area 9 — Hyannis, New Bedford
Area 10 — Plymouth
Area 11 — North Shore
Area 12 — Greater Boston (Sanders Theater)

The changes indicated above have accomplished a certain amount of decentralization; they have made it possible better to satisfy the desires of local chairmen especially regarding the time of meetings, and finally these changes have made it easier for doctors to get to the meetings. In general, the results have been very gratifying.

In the eleven teaching areas outside Boston, 36 exercises have been conducted under the auspices of this committee. With one or two exceptions, the attendance has been excellent, revealing a definite increase over previous years. However, as in previous years, actual attendance reports are not available. This past year has witnessed the development of a very satisfactory liaison between local chairmen and the Boston group. Undoubtedly this has contributed greatly to the success of the meetings.

Sanders Theater Course

This is the fourth year of these meetings. As usual, under the able leadership of Dr. Hurxthal and the various program chairmen, an attractive program was arranged. This year it seemed inadvisable to send out registration cards so that we have no figures on total registration. Judged from average attendance, however, the meetings were as well received, if not better, than in previous years.

General Discussion

The aim of postgraduate medical instruction as conducted by the Massachusetts Medical Society is to make available to all physicians in the Commonwealth a certain amount of useful information without charge and with the express purpose of thereby improving medical care. There is no question concerning the interest of physicians in such an endeavor. The real question that constantly confronts your committee is how we can best accomplish the objectives of such an endeavor.

In the light of recent developments in the practice of medicine, it is our belief that this problem merits the attention of all thoughtful physicians. Anything we can do to close the gap that now exists between available medical knowledge in teaching centers and in outlying districts, or to stimulate the formation of local teaching centers scattered throughout the State, or both, will help solve the problem of medical manpower distribution and will also help answer some of the current criticisms of medical practice.

Viewed in this larger sense, there is still plenty of work ahead for your committee. It is suggested that we devote more attention to community needs and explore the possibilities of closer affiliation with the Department of Public Health and with the various scientific bodies with headquarters hereabouts. It is also suggested that your committee endeavor to enlist the support of the deans of the medical schools with the thought in mind that it is perhaps not too much to suggest that the medical schools have a certain responsibility in this work.

Of course, a good deal of graduate teaching is going on outside the scope of your committee, and actually some areas have set up teaching courses conducted entirely by local talent. A notable example is the course conducted for the past three years by the Springfield group. Such endeavors should be encouraged, and possibly your committee could help in the formation of study groups in other areas.

These and other considerations are the concern of this committee. We are very conscious of the increasing importance of this work. It is our hope that with the continued co-operation of the members of this Society there will be a constant improvement in the type and scope of postgraduate medical instruction for the betterment of medical practice in this state.

W. R. OHLER, *Chairman*

APPENDIX NO. 21

COMMITTEE ON MEDICAL ECONOMICS

At the request of the Council, the Committee has reviewed the policies of the Society concerning activities that might be questioned by the federal Government in relation to anti-trust laws. Legal counsel assures us that so far as the Blue Shield is concerned the Society and Blue Shield are clear. We are advised that investigation of other activities of the Society is not necessary at this time.

ALLAN M. BUTLER
VLADO A. GETTING
HENRY A. ROBINSON
MERRILL C. SOSMAN
ELMER S. BAGNALL, *Chairman*

APPENDIX NO. 22

COMMITTEE TO MAKE RECOMMENDATIONS AS TO FUTURE DIRECTORS OF THE BLUE SHIELD

To hold office until 1952:

Mr. Eban H. Ellison, Jr., reappointment
Mr. Joseph K. Milliken, Jr., reappointment

Dr. Samuel A. Robins, reappointment
Dr. James C. McCann, reappointment
Mr. Harold B. Leland, reappointment

To hold office until 1951:

Mr. Everett Thatcher, to replace Dr. Eugene Walker, who has resigned.

Employee Relations Secretary, Community Chest Springfield, Massachusetts

Mr. Wilfred T. Connell, to replace Mr. Benjamin Hull who has resigned.

Business Manager, Boston Photo-Engravers Union No. 3, 294 Washington Street, Boston, Massachusetts.

HAROLD G. GIDDINGS
ELLIOTT P. JOSLIN
PEIRCE H. LEAVITT
GEORGE G. SMITH
LELAND S. MCKITTRICK, *Chairman*

APPENDIX NO. 23

COMMITTEE ON SCHOOL HEALTH

This committee met on March 23, 1949, with Drs. Morris, Bagnall, McKay, Garland and Maclachan present. Dr. Allan R. Cunningham, of the Department of Public Health, was a guest.

Whatever is done by the school physician must be done well. This axiom should be the guide in any program designed for the school physician.

Efforts should be continued to interest district medical societies in appointing a committee on school medical services. A section on school health of the Massachusetts Medical Society, as suggested at the Massachusetts Health Conference, might better accomplish this purpose.

The Committee favors the establishment of full-time, trained community health units as recommended by the special commission established in 1947 to study and investigate certain public-health matters (H 1766) and believes that the development of such units with full-time, trained personnel will necessarily assist in the development of satisfactory school health services.

The Committee believes that health education is a basic need:

a. By teachers specially trained in this field
b. By guided health experiences
c. By participation such as is provided by school health council and student health councils
d. By attendance of parents at health examinations

The Committee approves in-service training courses for professional personnel for the purpose of improving school medical services:

a. To develop effective teacher-nurse conferences for screening and other purposes
b. Basic psychiatric screening methods should be developed in school physicians to enable them to detect cases in need of special expert attention
c. Courses in school health for physicians, should be sponsored by the Massachusetts Medical Society, in collaboration with the Department of Public Health and the schools of public health.

ELMER S. BAGNALL
STEWART H. CLIFFORD
JOSEPH GARLAND
FLORENCE L. MCKAY
KENNETH L. MACLACHLAN
THOMAS F. REILLY
ERNEST M. MORRIS, *Chairman*

APPENDIX NO. 24

SUBCOMMITTEE OF THE EXECUTIVE COMMITTEE ON BLUE CROSS–BLUE SHIELD PROBLEMS

The Subcommittee of the Executive Committee on Blue Cross–Blue Shield Problems met at 8 Fenway on Friday, March 25, at 4:00 p.m.

Your subcommittee was represented at a meeting of the Chairmen of Blue Shield's District Professional Service Committees, Officers of the Massachusetts Medical Society and members of the Blue Shield Board of Directors, held on January 26, 1949, at which the question of charges to limited (over-income) members of Blue Shield was discussed at length. Considerable evidence was presented that fees are not always based on ability to pay. *Although it was suggested that charges to limited (over-income) members of Blue Shield be limited to fixed percentages of the basic* Blue Shield allowance, this suggestion was discarded, and *the Executive Director was instructed to refer cases that* could not be resolved in his office to the appropriate Blue Shield District Professional Service Committee. This mechanism is in accordance with the Blue Shield By-Laws as approved by the Council of the Massachusetts Medical Society.

Your subcommittee believes that the unreasonable charges being rendered in certain instances to Blue Shield and non-Blue Shield patients alike are having an adverse effect upon the public-relations efforts of the Massachusetts Medical Society. It is therefore recommended that a subcommittee of the Committee on Public Relations be constituted to investigate the allegation that patients are being charged fees in excess of their ability to pay, and, if such practice exists, to recommend an appropriate remedy.

Because of the severe cut in benefits undertaken on May 1, 1948, Blue Cross now finds itself in the position of being able to liberalize its subscriber contract. To this end it has just completed a series of twenty-one meetings with representatives of subscriber groups throughout the Commonwealth. It is anticipated that in the near future Blue Cross will increase the number of "full-benefit" days from thirty to sixty and the maternity allowance from seven dollars ($7.00) per day through ten days to a flat seventy dollars ($70.00) per case.

Your subcommittee has been advised that the formation of a Blue Shield insurance company will in all probability be considered by the American Medical Association House of Delegates in Atlantic City next June. The proposed Blue Shield company would be independent of the Blue Cross company now being organized but would, no doubt, work co-operatively with the Blue Cross company.

Your committee recommends that the Massachusetts Medical Society record itself as favoring the establishment of an independent Blue Shield insurance company to provide Blue Shield coverage for national accounts in areas where coverage is not now available and supplement coverage in areas where existing coverage does not adequately satisfy the reasonable demands of national accounts.

PAUL M. BUTTERFIELD
JOHN FALLON
HARVEY A. KELLY
JOSEPH C. MERRIAM
CHARLES J. E. KICKHAM, *Chairman*

APPENDIX NO. 25

COMMITTEE ON BY-LAWS AND COUNCIL RULES

The Committee met at the Harvard Club on March 23, 1949. Present were Drs. Edward P. Bagg, Albert A. Hornor, Elmer S. Bagnall, Daniel B. Reardon and H. Quimby Gallupe.

In order to enhance the efforts of the Director of Medical Information and Education and in order to bring his work before the Council the Committee unanimously recommends the following amendments to the by-laws of the Society as amended May 25, 1948:

1. Chapter IV, Section 1: eliminate the "and" following the second comma in line 4 and insert after the comma following the word "Society" in line 4 the words "The Director of Medical Information and Education."

2. Add to Chapter VI, Section 8, as amended, the following: "He shall be a nonvoting member of all committees of the Society, with the exception of the Committee on Ethics and Discipline. He shall be privileged to distribute the information acquired from these committees with the approval of the respective chairmen."

The committee recommends that it be authorized to publish a new volume containing the Digest, By-Laws, Code of

Ethics and Medical Defense Act of the Society, and the Principles of Medical Ethics of the American Medical Association.

The committee recommends that amended by-laws be checked for correctness of form by the assistant editor of the *New England Journal of Medicine.*

ELMER S. BAGNALL
ALBERT A. HORNOR
FRANK R. OBER
EDWARD P. BAGG, *Chairman*

APPENDIX NO. 26

COMMITTEE ON DIABETES

The Committee has met and considered various means of extending plans for bringing under treatment the undiscovered cases of diabetes of the Commonwealth. The efforts already made by some district societies indicate clearly that the district societies can really carry out diabetes-detection programs most efficiently. The importance of this problem has been recognized by other committees of this society, and it is the desire of the Committee on Diabetes to present with the Committee on Public Health and the Committee on Industrial Medicine the following resolution:

WHEREAS, the Massachusetts Medical Society has already approved an attempt to find the undiagnosed diabetic patients of the Commonwealth and bring them under treatment, and

WHEREAS, representatives of a large number of industries in the State have expressed a desire to co-operate with efforts directed at the discovery of latent diabetes in order to secure early treatment,

BE IT RESOLVED that the Council of the Massachusetts Medical Society recommend suitable action by the officers and committees of the district medical societies to carry out appropriate programs aimed at the discovery of diabetes in the community consistent with the Diabetes Detection Program and Diabetes Week sponsored by the American Diabetes Association.

FRANK N. ALLAN
GEORGE BALLANTYNE
JOSEPH ROSENTHAL
JAMES L. SMEAD
JAMES H. TOWNSEND
PRISCILLA WHITE
HOWARD F. ROOT, *Chairman*

APPENDIX NO. 27

COMMITTEE ON VETERANS AFFAIRS

A meeting of this committee was held at 8 Fenway on March 9, 1949, to confer with Drs. Pratt, Adler and Schultz, of the Veterans Administration, concerning their policies in the outpatient treatment of veterans with neuropsychiatric disabilities.

After an extensive study of all neuropsychiatric patients under fee-basis treatment, it has been determined that in general their difficulties are of such complex nature as to require special psychiatric technics. Unless they receive such specific care, their condition tends to become static, and the final outcome is usually a chronic illness refractory to further measures.

In Metropolitan Boston, where specialist resources are readily available, patients are either accepted for treatment at the Mental Hygiene Clinic, Boston Regional Office, or are authorized fee-basis psychotherapy by certified specialists in neuropsychiatry. In exceptional cases or in such areas where specialists' care is not readily available, patients are authorized treatment by the family physician. As required by Veterans Administration regulations, treatment reports are reviewed monthly by a psychiatrist to determine the need for continuation of treatment or necessary changes.

On the basis of a number of such reports, it has become obvious that clarification of certain clinical points is in order. The following recommendations are offered as a guide to family physicians treating veterans with neuropsychiatric disabilities:

Overemphasis on treatment of functional somatic complaints affords only temporary symptomatic relief while focusing the patient's attention on areas that are actually remote from the real cause of his illness. This has the effect of supporting the patient's reluctance to approach his complaints in emotional terms.

Reliance on sedatives or hypnotics to control emotional distress for long periods has led in a number of cases to drug habituation and has thereby created an additional serious problem.

Liberal use should be made of either fee-basis psychiatrists or the Mental Hygiene Clinic of the Veterans Administration, Boston Regional Office, for psychiatric consultation, re-evaluation or other specific psychiatric care.

Lastly, physicians are reminded that the *Veterans Administration regulations permit the authorization of treatment only for service-connected disabilities.* Patients are not entitled to reimbursement for the treatment of any other illness that may occur concomitantly with their adjudicated service-connected disabilities.

The Committee urges that these recommendations be brought to the attention of members of the Society in the *New England Journal of Medicine.* The committee further recommends that all matters of difficulty between the Veterans Administration and the doctors, arising out of the care of veterans, shall be referred to the Board of Review of the Massachusetts Medical Society for their consideration.

SAMUEL BACHRACH
JOHN M. BARRY
KENNETH A. BROWN
JOHN F. CONLIN
JAMES M. FAULKNER
GEORGE S. REYNOLDS
HARVEY A. KELLY, *Chairman*

APPENDIX NO. 28

REPORT OF THE TREASURER

With the increase in resident annual dues in 1948 from $10 to $25, income from such dues rose from $59,020 in 1947 to $134,960. Income from nonresident dues rose from $2244 to $2514. Income from censor fees of $1335, in 1947, fell to $1053, in 1948. Net profits from the Committee on Arrangements, $6234 in 1947, fell to $3153 in 1948, and that from the New England Postgraduate Assembly $528 in 1947, rose to $1146 in 1948.

Among the endowment funds, the Phillips Fund is the only one with unrestricted use of income, and $250 was derived from this source in 1948. The incomes from the restricted funds have been applied this year to reduce expenses according to their respective purposes, as will be seen in the detailed expense account — the Brickley Fund toward luncheon expenses of the Committee on Ethics and Discipline, the Shattuck Fund toward the stipend given the Shattuck lecturer, and the Cotting Fund toward the cost of the Cotting luncheons.

Income from the securities in the General Fund rose from $5895 in 1947 to $6571 in 1948, and in the Building Fund from $1906 to $2127. In 1948 there was a loss on sale of securities in the General Fund of $1026, and in the Building Fund of $786. This was due to the sale of some of the holdings in Monsanto Chemical Company common stock and Consumers Power Company 4.5 preferred stock in both funds on advice of our investment counselors.

The book value of securities held in the General Fund has risen from $199,150 to $218,907 and in the Building Fund from $74,308 to $75,347. The principal of the Endowment Funds remains at $28,166.

Total revenue in the General Fund was $149,998 for 1948, and total expense was $114,640, leaving a surplus of income over expenditures of $35,358.

By previous vote of the Council, the total assets of the General Fund are to be pegged at $250,000, and any surplus for a given year to be diverted to the Building Fund. At the beginning of 1948 the assets of the General Fund, calculated on cash and book value of securities, was $243,226, leaving presumably $6774 to be added to bring the total to $250,000 and the remainder of the surplus or $28,584 to

revert to the Building Fund. However, the true liquidating value of the Fund must be based on the market value, not book value, of the securities held and in the case of the General Fund, the market value of the securities is $9183 less than their book value, so actually only $19,401 can be added to the Building Fund out of surplus this year, and the difference in market and book values held as reserve.

At the beginning of 1948 the total assets of the Building Fund in cash and book value of securities stood at $76,072. Adding to this the $19,401 conveyed from the surplus in the General Fund and $2127 income from the Building Fund securities brings the amount to $97,600. But loss from sale of securities of $768 and difference between the market and book values of the securities of $2154 must be deducted to bring the actual cash value of the Building Fund to $94,678 at the end of the year.

There is no particular reason to maintain a large General Fund. The amount derived in income from its securities is only 4 per cent of the Society's total income for general expenses, whereas 90 per cent of the income for this purpose comes from assured annual dues. But there is great merit in increasing the Building Fund in every possible way in anticipation of the time permanent headquarters are established and to assure their maintenance without being dependent on income from dues, which should be spent for general expenses covering the activities of the Society.

We enter 1949 with a grand total of assets in cash and securities of $381,771, an increase of $24,243 over the previous year.

During the year the following changes have been made in the portfolios. In the General Fund, $20,000 U. S. Treasury 2½ per cent bonds due 1972/67 were sold, as were 60 shares Consumers Power 4.5 preferred stock and 80 shares Monsanto Chemical Company common stock. Purchases in the General Fund included $10,000 U. S. Treasury 2 per cent bonds due 1954/52, $10,000 U. S. Treasury 2 per cent bonds due 1951/49, 100 shares Newmont Mining Corporation common stock, 300 shares Wisconsin Electric Power common, 25 shares Allied Chemical and Dye common, 125 shares General Electric common, 70 shares Firemans Fund Insurance and $6000 Peoples Gas Light and Coke 3 per cent bonds due December, 1963. In the Building Fund were sold 30 shares Consumers Power Company 4.5 per cent preferred stock and 50 shares Monsanto Chemical Company common, while purchases were made of 50 shares Newmont Mining Corporation common, 15 shares Abbott Laboratories common, 20 shares Gulf Oil Corporation, common and $3000 Peoples Gas Light and Coke 3 per cent bonds due 1963.

Because of an added amount of work connected with the Federal Old Age and Unemployment taxation and the State unemployment taxation, retroactive for several years, the Assistant Treasurer made a welcome entry into active participation in the Treasurer's office to handle all tax correspondence. His services have been greatly appreciated, and his status, emerging from that of a figurehead, to one in which he has more intimate contact with the office, should bring with it mutual gratification.

Upon proper authorization the Treasurer wrote a detailed description of the Society's activities to the Treasury Department, Washington, D. C., to ascertain if any operations might be bringing us unwittingly nearer to the brink of liability for federal income taxation as a corporation. The reply was most reassuring, taking up item for item, to affirm that, as now conducted, our endeavors would not endanger our income-tax exemption.

Before it was finally voted to increase the dues to $25 in 1948, the committee appointed to study the need reported that they advised this amount, somewhat above coverage for the expenses at that time, in order that the dues would not require further increase for many years to come. With this laudable aim in view it is important 1or the members to consider the narrow margin between the budget of $142,000 for 1949 and the estimated income of $150,000. Whereas it is possible that the whole amount budgeted will not be spent, care should be taken in long-range contemplation to plan to confine the extent of the Society's activities within the limits of the stable income; if it should be deemed advisable that some lines of effort be expanded, others would by necessity have to be curtailed.

COMPARATIVE EXPENSES 1947 AND 1948

	1947	1948
Salaries:		
Secretary	$3,820.64	$8,300.00
Executive Secretary	4,800.00	4,800.00
Treasurer	2,500.00	2,000.00
Assistant Treasurer	0.00	500.00
Director of Medical Information and Education	3,750.00	8,000.00
Expenses:		
President	214.82	338.51
President-Elect	74.04	4.95
Secretary	2,779.61	3,412.00
Treasurer	2,059.00	1,996.27
Director of Medical Information and Education	469.39	3,364.22
Delegates to A. M. A.	676.23	2,560.36
Cotting luncheons	450.00	290.00
Refunds to district societies	4,000.00	8,000.00
New England Council dues	100.00	100.00
Clerical work	5,162.00	6,145.00
General administrative	3,562.89	4,155.95
Shattuck Lecture	200.00	16.66
Donation to Boston Medical Library	1,180.00	26,675.00
Premium on pension plan	4,233.80	4,080.40
Committee Expenses:		
Arrangements	0.00 (profit)	0.00
Ethics and Discipline	60.49	43.92
Executive	232.09	33.05
Fee Schedule	348.35	0.00
Finance	0.00	0.00
Industrial Health	17.80	41.87
Headquarters	7,421.19	4,166.20
Legislation	4,311.30	4,536.15
Medical Economics	63.54	0.00
Medical Defense	1,474.51	3,730.00
Membership	137.77	66.11
Postwar Loan Fund	151.12	0.00
Postwar Planning	0.62	0.00
Information Bureau	3,128.72	2,676.48
Postgraduate Education	3,097.14	4,499.50
Public Health	195.91	98.39
Public Relations	451.61	304.29
Publications	2,346.12	88.81
Rehabilitation	71.03	0.00
Special Services	361.28	0.00
To Study Malpractice Insurance	148.91	0.00
Tax-Supported Medical Care	0.00	36.31
Advisory School Medical Services	29.88	0.00
To Consider Secretary as full-time Officer	19.74	0.00
To Meet with Rehabilitation Centre	0.00	27.19
On Expert Testimony	0.00	88.83
National Emergency Service	0.00	213.55
On Council Rules	0.00	66.24
Miscellaneous:		
Net loss on sales securities General Fund	0.00	1,026.14
To carry *New England Journal of Medicine*	0.00	5,000.00
Taxes:		
Federal Unemployment	462.99	59.49
Federal Old Age	65.58	198.31
Massachusetts Unemployment	0.00	535.39
Prior Years Massachusetts Unemployment	0.00	2,364.90
	$64,630.11	$114,640.44

APPENDIX NO. 29

AUDITING COMMITTEE

The Auditing Committee appointed the firm of Hartshorn and Walter, accountants and auditors, to audit the books and accounts of the Massachusetts Medical Society. This audit and account are hereby approved by us.

The analysis of the revenues and expenses of the Society and the balance sheet of the condition of the funds of the Society have been inspected and approved by us.

FRANK T. DOWNEY
HOWARD B. JACKSON, *Chairman*

CASE RECORDS OF THE MASSACHUSETTS GENERAL HOSPITAL

Weekly Clinicopathological Exercises

FOUNDED BY RICHARD C. CABOT

TRACY B. MALLORY, M.D., *Editor*

BENJAMIN CASTLEMAN, M.D., *Associate Editor*

EDITH E. PARRIS, *Assistant Editor*

CASE 35291

PRESENTATION OF CASE

A fifty-eight-year-old Italian, para IV widow entered the hospital because of vaginal bleeding.

Ten years before admission the patient passed through a relatively uneventful menopause and had no further bleeding until six months before entry, when she suddenly began to spot. This spotting lasted five days and then disappeared completely. She had a similar episode of bleeding two months before admission, which also lasted five days, and then a third episode a month later. There was no associated vaginal discharge or pain and no other symptoms. There was no history of estrogen medication.

Her catamenia had begun at twelve years of age, and her menstrual periods were always regular. She had had a gall-bladder operation fifteen years previously and a second abdominal operation, for some unknown reason, a few years later.

Physical examination showed a markedly obese woman. Examination of the heart and lungs was negative. The abdomen was so obese that no masses could be made out. There was a scar in the right upper quadrant.

The blood pressure was 135 systolic, 85 diastolic. The temperature, pulse and respirations were normal.

Examination of the urine was negative. The blood showed a hemoglobin of 13 gm. and a white-cell count of 6500, with 63 per cent neutrophils. A vaginal examination was not remarkable.

An operation was performed on the second hospital day. Under anesthesia, a grapefruit-sized abdominal mass was palpated, on the left side above the pelvic brim, but could be pushed across the midline to the right side. The uterine curettings were not grossly abnormal.

A laparotomy was then performed.

DIFFERENTIAL DIAGNOSIS

DR. HOWARD ULFELDER: The history is that of an obese woman who had her menopause ten years before, who was essentially well in all other respects, who had recurrent episodes of vaginal bloody spotting for six months prior to operation and who, under anesthesia, proved to have a movable mass the size of a grapefruit.

I think it might be useful in this particular case to single out the two outstanding findings and run over the differential diagnosis of each one. The first one, of course, is post-menopausal vaginal bleeding. A common cause for this — in fact, the most common cause nowadays — is exposure to the action of estrogens. We are told that this patient was not given estrogen medication; we must not overlook the fact that she may have been producing her own estrogen. There are ovarian tumors that make estrogen in large quantities. These are the granulosa cell tumor and the thecoma. Certain other ovarian tumors also produce small quantities of estrogen — even papillary cystadenocarcinoma of the ovary occasionally has associated endometrial bleeding without a malignant lesion of the endometrium.

A second cause for post-menopausal vaginal bleeding is a tumor of the uterus. This may be either malignant — carcinoma of the uterine fundus or of the cervix — or benign — a uterine polyp. There are a number of other causes of post-menopausal bleeding. A common one is the senile change frequently noted in the vagina. Senile vaginitis is frequently associated with bloody spotting. It is usually also associated with some degree of vaginal discharge and local irritation. Some people believe that there are senile changes in the endometrium corresponding to this visible change in the vaginal mucous membrane, and it has occasionally been postulated that bleeding from a senile endometrium or endometritis can occur just as we see bleeding from senile vaginitis. This has never been proved. Occasionally, in hypertension, we find post-menopausal vaginal bleeding explained on no other basis. This has been described as uterine apoplexy. It is a concept that is not very strongly held by anyone today but is occasionally mentioned and should be included in the differential diagnosis of this condition.

Blood dyscrasias, of course, can produce bleeding from the uterus as from any other part of the body, and they must be considered. And, finally, there is a group of patients in whom no explanation is ever found for the post-menopausal vaginal bleeding. Unfortunately this is a rather large group. The present state of our knowledge about this symptom is such that there are many patients in whom the most thorough study fails to reveal any cause for post-menopausal bleeding.

Some diagnoses that I have mentioned may be excluded on the basis of the protocol

This patient did not have hypertension. Blood dyscrasia was certainly not noticeable in the report.

Let us turn now to the differential diagnosis of the abdominal mass, and then let us see if there is any one diagnosis that will explain both these findings. An abdominal mass that appears to be freely movable, in a patient such as this, may be an ovarian cyst or tumor. I will not go into a classification of ovarian tumors here. A pedunculated fibroid could produce such a mass, and so could a cyst of the mesentery, carcinoma of the bowel and, finally, the spleen. Spleens are occasionally on a very long pedicle and may be found anywhere in the abdomen.

Is there any diagnosis that would explain both the post-menopausal bleeding and the presence of a movable mass in the abdomen? Ovarian tumors or cysts that produce estrogen and in turn cause growth of the endometrium and bleeding from it should by definition produce endometrium. I am very much interested in the statement that the uterine curettings were not grossly abnormal. In a woman ten years past the menopause, who has received no estrogen therapy by mouth or parenterally, that statement should mean that there were no uterine curettings, and I should like to ask, if it is a fair question, whether there were curettings at all or whether this statement means that there were curettings but they were not grossly abnormal.

Dr. Marshall K. Bartlett: There was a moderate amount of tissue that appeared as a result of curettage.

Dr. Ulfelder: The statement that the uterine curettings were not grossly abnormal means, then, that this did not look like a malignant lesion of the uterine fundus. Were the curettings similar to those ordinarily seen in the pre-menopausal woman?

Dr. Bartlett: Essentially the same, I believe.

Dr. Ulfelder: That very definitely raises the possibility that this patient was making estrogen and therefore growing an endometrium. However, one can get from the post-menopausal uterus material that is reported later by the pathologist as showing atrophic endometrium. If one curettes carefully, I am sure it is always possible to get a little something, although occasionally we see nothing at all.

A possible diagnosis therefore in this case is a tumor of the ovary, which made estrogen and caused secondary development of endometrium in this post-menopausal uterus. Such a tumor would be either a granulosa cell or a thecoma or, less likely, a papillary cystadenoma. Carcinoma of the uterus and polyp of the endometrium should have been detected in the curettings, probably grossly. If senile changes had been noted in the vaginal mucous membrane they would have been described in the protocol, particularly since that must have been in the operator's mind as a possible explanation for the bleeding when he examined this patient. Fibroid could explain the mass but not the bleeding. Fibroids of the uterus do not produce bleeding in the post-menopausal woman.

The only diagnosis I can see that will explain both findings on the basis of one lesion is an estrogen-producing tumor of the ovary, with growth of the endometrium secondary to it. There is one other possible explanation for her bleeding, which I neglected to mention, and that is resumption of normal menstruation. You will note from the protocol that there was some rhythmicity to this woman's bleeding, and that the bleeding was somewhat like periods in that it took place for about five days and then ceased altogether until the next episode. I recall no case in which this has occurred as long as ten years after a cessation of periods on physiologic grounds. I think it is not uncommon for women to have a period or two, as long as eighteen to twenty months after the cessation of periods, but I think that is a most unlikely explanation for the bleeding in this woman after this long interval.

Endocrine-producing tumors of the ovary are rare, and one has to make, therefore, a rare diagnosis, to explain both these findings on the basis of one lesion. It is so rare that I think it is unlikely in this patient. I think it is more likely that these two findings were not associated. I think she had a mass, and I think she had post-menopausal bleeding. I think the post-menopausal bleeding probably will not be explained, and I think the mass was an entirely independent condition. I would consider a spleen as the most likely mass in this patient. The mass was rather high on the left side, and when it was displaced, it was displaced to the right but not down. I am also interested in the statement that the pelvic examination was not remarkable. I think I will "stick my neck out" and say that this patient had a wandering spleen, that she did not have any good explanation for post-menopausal bleeding, and that it is possible, but not likely, that she had an estrogen-producing tumor of the ovary.

Dr. Tracy B. Mallory: Is there any further comment? Dr. Bartlett, I wonder if you would tell us what you found at operation.

Dr. Bartlett: This case was a good example to me of the value of re-examining the abdomen under anesthesia, because this woman had a really sizable mass, — I think "grapefruit size" is a fair description of it, — and yet we had all completely missed it. The mass was easily felt under anesthesia, and it seemed to be symmetrical and smooth. Although when first felt it was in the left side of the abdomen it could very easily be rolled across into the right side, off into the right gutter, so to speak, and then back again. It seemed to lie a little more easily on the left than on the right, and on bimanual examination we were not able to make out any connection with the uterus. We could move the abdominal mass, so far as we could tell, without

moving the uterus, but one must not forget that this was a very obese patient. This examination under ether gave us the information on which to decide to do a laparotomy, and when that was done it was apparent that the mass was a cyst arising in the left ovary on a long, stretched-out pedicle. It was of the size described and was smooth on the outside, with a moderately thick wall but with no external projections on it. The tubes and the other ovary were not unusual. The uterus was somewhat larger than one would expect after the menopause but again was not definitely beyond normal limits. A total hysterectomy was carried out, both tubes and ovaries being removed.

Clinical Diagnosis

Ovarian cyst.

Dr. Ulfelder's Diagnoses

Post-menopausal uterine bleeding of unknown etiology.
Wandering spleen.
Second choice: estrogen-producing tumor of ovary.

Anatomical Diagnosis

Granulosa cell tumor of ovary.

Pathological Discussion

Dr. Mallory: The specimen Dr. Bartlett removed was a soft, fluctuant tumor mass, which looked and felt like a cyst. On cutting across it, we found that there were cystic areas and also solid tumor foci. One of the cystic areas contained some almost cheesy material. There were also shaggy, papillary masses projecting into the cyst. From the gross examination we thought that it was probably a papillary cystadenoma of the ovary, and were considerably surprised when the microscopical sections came through to find that the solid portions of the tumor showed a very characteristic, unmistakable pattern of granulosa cell tumor. The endometrium was not obviously hyperplastic. There was slight cystic dilatation of some of the glands, but the epithelium was fairly tall, and was not of the atrophic type seen in the senile cystic endometrium. There was a very mild hyperplasia present.

Are there any questions that anyone would care to ask?

Dr. Alfred Kranes: I still do not understand why Dr. Ulfelder started what sounded like a perfectly logical diagnosis, but because of its rarity, made a rarer diagnosis.

Dr. Ulfelder: In my experience a wandering spleen is less rare than granulosa cell tumor.

Dr. Kranes: Really?

Dr. Mallory: I will certainly back up Dr. Ulfelder in his statement that when uterine cancer is excluded we are unable to find any pathological reason for post-menopausal bleeding in the majority of cases when we are supplied with the ovaries and uterus.

Dr. Bartlett: Dr. Mallory, would this endometrium be unusual, in a case of unexplained post-menopausal bleeding?

Dr. Mallory: I do not believe there was enough change in it so that I would have probably picked it up, if I had been given the curettings alone. I do not believe I would have made a diagnosis of hyperplasia, and I would not have suspected at all strongly granulosa cell tumor. Sometimes, when there is frank hyperplasia, we have been able to suggest the diagnosis on the basis of curettage.

CASE 35292

Presentation of Case

A forty-nine-year-old housewife entered the hospital because of abdominal pain and vomiting.

Ten days before admission she had a cold and pain in her back, for which she went to bed. Three days before admission she noted the onset of lower abdominal crampy pain and somewhat later vomiting. She failed to pass anything by rectum except under the stimulus of enemas, when on two separate occasions small amounts of gas and hard feces were obtained. The vomiting continued and became brown in color. On the day of admission she became cold and clammy, and the pain diminished.

Twelve years before admission a Mikulicz procedure had been performed, with resection of an infarcted segment of sigmoid. One month later a laparotomy was performed, and obstructed loops of small bowel were freed from around the sigmoidostomy. One year later the sigmoidostomy was closed.

Physical examination revealed a semicomatose, very pale, clammy, cold woman in no acute pain. The lips were dry, the chest was clear, and the abdomen was distended and doughy with a nontender hernia (3 cm. in diameter) in the left upper rectus scar. The skin over the hernia showed a slight, bluish discoloration and was hot to the touch. No organs or masses were palpable, and no peristalsis was audible. Pelvic examination showed a lacerated, freely movable cervix; no masses or tenderness was made out. Rectal examination was likewise negative for masses and tenderness; the rectum was empty.

The temperature was 103.2°F., the pulse 100 and the respirations 25. The blood pressure was unobtainable.

Examination of the blood revealed a red-cell count of 5,000,000, with a hemoglobin of 16 gm., and a white-cell count of 16,000. An x-ray film of the chest was normal. A plain film of the abdomen showed a loop of bowel measuring 12 cm. lying across the right midabdomen, and numerous moderately dilated loops of small bowel. A small amount

of gas was seen in the descending colon and rectum.

The patient was given fluids and blood intravenously and improved somewhat. The hemoglobin, hematocrit and total protein dropped from 17.5 gm. per 100 cc., 51 per cent and 7.8 gm. respectively, to 15.5 gm. per 100 cc., 46 per cent and 6.5 gm. The blood pressure reached a maximum of 110 systolic, 60 diastolic. A urine specimen obtained on the second day gave a ++ test for albumin, and the sediment contained many granular and hyaline casts and 15 to 20 red cells and 10 to 20 white cells per high-power field. The nonprotein nitrogen was 82 mg. per 100 cc. The patient's condition never improved enough to warrant operation, and from the middle of the second hospital day, in spite of large amounts of intravenous fluids and blood, she became increasingly comatose, the blood pressure dropped, and the pulse became more rapid and weak. Drainage from a stomach tube at first was dark brown but later became blood stained, and no peristalsis was ever heard. The total urinary output during the patient's hospital stay did not exceed 400 cc. She died early on the third hospital day.

Differential Diagnosis

Dr. John B. McKittrick: There is only one diagnosis that I can make from the history as recorded, that is, intestinal obstruction, with perforation and peritonitis. Whether one could be more specific than that is problematic, since we have little information beyond the salient features of the short, acute illness. Whether the acute episode was of ten days' or three days' duration is not quite clear in my mind. The history described a "cold and pain in her back, for which she went to bed" ten days before admission. Apparently during the intervening seven days until she began to have lower abdominal crampy pain, and following that vomiting, the course was not remarkable. One does not know whether the back pain persisted and later merged with the lower abdominal cramps, whether there was a subsidence of the back pain and apparent recovery from the cold, or whether symptoms persisted during this period and merged into the more acute and dramatic picture developing three days before admission.

The past history reveals only that twelve years previously a Mikulicz procedure was done for infarction of a segment of sigmoid. It is to be presumed, then, that in the intervening period the patient was free of consequential complaints.

The physical examination and chemical picture on admission to the hospital give us little help beyond confirming the clinical impression of intestinal obstruction. A dehydrated patient in shock, semicomatose, with distended abdomen and evidence of hemoconcentration, is in perfect accord with the picture one sees in late intestinal obstruction. No mention is made of abdominal tenderness, and I think wisely because a patient in this condition loses the normal response to abdominal palpation. The subsequent course of the blood picture, with return to more normal levels following hydration, electrolyte replacement and transfusion, emphasizes this aspect of the obstruction problem. Such replacement therapy is essential to proper management, but must be followed by correction of the underlying disease. In this patient the process was so advanced that operation was not deemed practical.

The elevated nonprotein nitrogen, oliguria and urinary findings of hyaline and granular casts, and a few red and white cells do not, I believe, indicate renal disease. Such findings are perfectly consistent with dehydration associated with intestinal obstruction.

Can one, from the information given, reconstruct the course of events and localize the lesion? To go back ten days before admission, we find that she complained of what she called a cold and pain in her back. Pain in the back in intestinal obstruction is an interesting symptom, and while not common, when present is very suggestive of strangulation obstruction. However, it is inconceivable to me that this patient had strangulation obstruction for a period of ten days. Therefore I am forced to exclude the symptom of pain in the back from the episode immediately preceding admission. We are then left with a three-day story beginning with lower abdominal crampy pain and, somewhat later, vomiting. This suggests that the obstruction was low, rather than high, since the vomiting was a delayed symptom. Vomiting is a much more prominent feature in small-bowel than in large-bowel obstruction. On the other hand, one is more apt to find lower abdominal cramps in large-bowel than in small-bowel obstruction. About 20 per cent of patients, however, will localize pain in small-bowel obstruction below the umbilicus, so that one cannot depend upon the localization of pain entirely. The chemical changes with the rather severe dehydration suggest a marked degree of vomiting within a relatively short period of three days. This is much more suggestive of small-bowel obstruction. It would be unusual, I think, for a patient with the ordinary type of large-bowel obstruction to vomit enough to cause this degree of hemoconcentration and chemical imbalance in this space of time. The x-ray films of the abdomen should help us, and from the description, I would be more inclined to call this large bowel rather than small bowel. Usually, when one has a single loop of small bowel as much dilated as this, the remaining small-bowel pattern is apt to be proportionately distended. On the other hand, one may get tremendous distention of large bowel with relatively little distention of small bowel, or for all practical purposes no distention of small bowel if the ileocecal valve is competent. In a case of an isolated loop of small bowel, however, such as one might find in strangulation

obstruction, it would be very easy to have an x-ray picture not dissimilar to that described. The small amount of gas seen in the descending colon and rectum may have passed the point of obstruction or may have been introduced at the time of the numerous enemas, so I think we must exclude this as a significant finding, particularly in view of the patient's condition.

It seems to me that the most logical explanation for this picture is an isolated loop of small bowel with strangulation of the mesentery causing infarction with subsequent perforation and peritonitis. I cannot fit the whole picture logically with the diagnosis of large-bowel obstruction. I say this because of the short history, the amount of vomiting, the degree of dehydration and the rapidity of the downhill course, all of which are much more consistent with obstruction of the small as opposed to the large bowel. The blueness described in the area of the hernia may well have represented the bloody fluid associated with strangulation obstruction, or could simply have been the peripheral collapse and local congestion associated with peritonitis. However, I would not be a bit surprised to find that the patient had purulent, bloody fluid within the abdominal cavity.

My diagnosis, then, is small-intestine obstruction, mechanical in nature, with strangulation, perforation and peritonitis. I can only guess at the mechanism. A loop of bowel could have been caught in the hernia, even though the hernia was soft, or an intra-abdominal band may have precipitated the difficulty.

Clinical Diagnoses

Strangulation obstruction of small bowel due to adhesions and volvulus.
Peritonitis.
Cerebral thrombosis.

Dr. McKittrick's Diagnosis

Intestinal obstruction, mechanical, with strangulation, perforation and peritonitis.

Anatomical Diagnoses

Thrombosis of portal vein and branches of superior mesenteric vein.
Infarction of segments and of small bowel.

Pathological Discussion

Dr. Austin L. Vickery: The peritoneal cavity contained 700 cc. of hemorrhagic fluid. Loops of both small and large bowel were distended, but although there were numerous old fibrous adhesions binding loops of jejunum and sigmoid to the old abdominal scars, there was no evidence of kinking of the bowel or signs of mechanical obstruction. Three segments of small bowel extending from mid-jejunum to midileum were dark, reddish black and contained masses of blood in their lumens. The intestinal wall in these sites was edematous, friable and markedly hemorrhagic, with the intervening segments of small intestine presenting a bluish discoloration but lacking the picture of frank infarction of the previously mentioned loops. The mesenteric veins draining the infarcted sites of jejunum and ileum contained thrombi, which on microscopical examination proved to show signs of early organization. The portal vein showed a similar thrombotic process.

In the absence of an intra-abdominal inflammatory lesion, neoplasm or evidence of mechanical bowel obstruction, it appears that this case would fall into the category of idiopathic mesenteric venous thrombosis. In such cases the thrombi are bland in nature without evidence of inflammatory reaction in the wall of the vein or in the perivascular zones, and the etiology is obscure or conjectural. It is possible that a partial volvulus with torsion of the mesentery initiated the thrombotic process and that the resultant distention of involved intestinal loops effected a spontaneous reduction in the mechanical deformity.

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THE JOURNAL does not hold itself responsible for statements made by any contributor.

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CORNERSTONE OF THE TEMPLE

ISRAEL's Hebrew University-Hadassah Medical School, in accordance with an announcement previously published, was inaugurated on May 17 in a joint international ceremony taking place simultaneously in Jerusalem and at the Israeli Consulate in New York. Participating in the creation of the first school of medicine in the new state were Dr. Chaim Weizmann, president of Israel, and American medical scientists, teachers and administrators.

A symbolic part of the ceremony was the presentation by Warren R. Austin, United States ambassador to the United Nations, of a block of Vermont marble. This stone, a product of the same quarry that is supplying material for the United Nations permanent headquarters, was accepted by Mrs. Haim Yassky, of Jerusalem, widow of the late Hadassah medical director. It will become "cornerstone of the cornerstone" of the new medical-school building soon to be erected on Mt. Scopus, near Jerusalem.

From the days of ancient Israel and the lessons in hygiene that came from Judea, Jewish medicine has traced its brilliant course. As Dr. Weizmann said, the school will be another "vehicle in the struggle to make the ideals of social progress and democracy realities, not only in Israel but throughout the Middle East":

> It is another aspect of America's program to make the benefits of scientific advances available to other governments and other peoples. It is another instance of American generosity, and a manifestation of American Jewry's profound awareness of the meaning of Jewish history and tradition and their sensitivity to the cultural and physical needs of Israel today.

May the building of this university on a hill in Palestine be another step in the bringing of peace to a troubled land, and to a scattered race a home that it may look to, even if only a few inhabit it!

"BY THEIR FRUITS"

AFTER the death in September, 1947, of Dr. Robert Nason Nye, late editor of *The New England Journal of Medicine*, certain sums of money donated by his friends to the American Cancer Society were set aside for a definite purpose. This particular purpose, as announced in the editorial columns of the *Journal* on February 26, 1948, was an evaluation of the effects of radiation on the personnel of x-ray departments.

Approximately $2500 had been donated, which was later augmented by another $1000 from an anonymous giver, and this sum was voted as a grant to the Massachusetts General Hospital for the study in question. Already this study has borne first fruits, which are incorporated in the report by Hunter, Merrill, Trump and Robbins, appearing as the leading article in the present issue of the *Journal*.

The technical terms in which much of this preliminary report is necessarily written suggest certain more easily comprehended conclusions. Scattered diagnostic radiation, formerly thought to be soft and

comparatively harmless, is now shown to be relatively hard and penetrating. Consequently the roentgenologist must plan the protection of himself and his associates, so far as possible, from these marrow-reaching rays. The danger to the chance observer or to the patient is negligible. It is the daily exposure, month after month and year after year, from which the worker must be guarded.

Fortunately protection against scattered radiation is simple to attain by the means that are suggested, and the advice is offered that manufacturers of equipment could themselves provide more adequate protection for the examiner than is at present afforded.

DISTINGUISHED ALUMNUS

HARVARD University has again hewn to the line in its recognition of academic merit by the appointment of Dr. William A. Hinton as clinical professor of bacteriology and immunology in the Harvard Medical School. Dr. Hinton, the friend whom twenty-five generations of medical students have held in affectionate regard, thus becomes the first Negro to hold a professorship in Harvard University.

WILLIAM A. HINTON, S.B., M.D.

Dr. Hinton, who was born in Chicago in 1883, graduated from Harvard College in 1905 and from Harvard Medical School in 1912, and then served as a voluntary assistant in the Pathological Laboratory of the Massachusetts General Hospital until 1915. He joined the staff of the Harvard Medical School in 1923 and has remained on it consistently ever since, his most recent appointment prior to his present professorship having been that of lecturer on bacteriology and immunology. He has been a fellow of the Massachusetts Medical Society since 1913.

In addition Dr. Hinton has been director of the Laboratory Department of the Boston Dispensary and chief of the Wassermann Laboratory of the Massachusetts Department of Public Health since 1915, and for the past thirteen years chief of the laboratories of the Boston Floating Hospital. He is a special consultant to the United States Public Health Service, consultant to the Massachusetts School for Crippled Children, and a lecturer at Simmons College.

Dr. Hinton, also an authority on rabies, is best known for his research in syphilology and for the development of the Hinton and the Davies–Hinton tests for syphilis.

Certain lines that were written in commemoration of the University's two-hundredth anniversary, a hundred and thirteen years ago, seem to reaffirm a still unaltered code:

With freedom to think and with patience to bear,
And for right ever bravely to live.

The Dental Recorder of July 1st, gives an account of curing tooth-ache by steam, on the Ohio River. The fellow who performed, had rights to sell, and of course belonged either to Connecticut or Massachusetts. . . . People are injuring themselves exceedingly by drinking soda immoderately, this warm weather. They should abstain, too, from gormandizing on ice creams late in the evening.

Boston M. & S. J., July 18, 1849

MASSACHUSETTS MEDICAL SOCIETY

OPPORTUNITIES FOR PHYSICIANS

West Pembroke, Maine, offers a good opportunity for a general practitioner. There is no other doctor in the town than the retiring incumbent, Dr. C. E. Chapman. The nearest hospital is in Eastport, twelve miles away. Any interested physician should make contact with Dr. Chapman.

The Western Maine Sanatorium, West Minot, Maine, is in need of a physician. Application for further information should be made to Dr. Lester Adams, superintendent.

DEATHS

DONOVAN — Arthur B. Donovan, M.D., of Brookline, died on June 22. He was in his fifty-second year.

Dr. Donovan received his degree from Tufts College Medical School in 1923. He was a former member of the staffs of Mt. Auburn, St. Margaret's, Boston Lying-in, Boston City, Harley and Whidden Memorial hospitals, and for the last five years had been chief surgeon of the Lumberman's Mutual Casualty Company. He was a member of the Boston Gastro-Enterological Society.

His widow, three sons and a daughter survive.

PERKINS — Franklin A. Perkins, M.D., of Dorchester, died on June 5. He was in his sixty-sixth year.

Dr. Perkins received his degree from College of Physicians and Surgeons, Boston, in 1911.

His widow and a sister survive.

ROCKWELL — Alfred E. P. Rockwell, M.D., of Shrewsbury, died on June 19. He was in his eightieth year.

Dr. Rockwell received his degree from Boston University School of Medicine in 1899. He was a fellow of the American Medical Association.

His widow and a brother survive.

ROSENBLOOM — Carl W. Rosenbloom, of Holyoke, died on March 2. He was in his sixty-third year.

Dr. Rosenbloom received his degree from Tufts College Medical School in 1909.

His widow, a son, a daughter and three sisters survive.

TAURO — Emily C. Tauro, M.D., of Stoneham, died on June 23. She was in her forty-eighth year.

Dr. Tauro received her degree from Boston University School of Medicine in 1927.

Her husband and a daughter survive.

MISCELLANY

UNIVERSITY OF VERMONT

A cardiovascular unit has been established at the Bishop DeGoesbriand Hospital by the College of Medicine of the University of Vermont for the special study and care of cardiovascular patients by means of modern scientific methods. It went into operation on July 1.

Investigative work, now in progress, is partly supported by funds from the National Heart Institute and the American Heart Association.

The staff of the unit is composed of W. Raab, M.D., F.A.C.P., Director; E. Lepeschkin, M.D.; J. H. Bland, M.D.; and R. J. Humphreys, M.D.

A cardiovascular outpatient clinic, conducted by C. M. Terrien, M.D., will function in close co-operation with the unit.

One of the first activities of the new unit was a refresher course on cardiovascular disease for practicing physicians, given in June. Guest speakers were Dr. Paul D. White, of Boston, and Dr. Mercier Fauteux, of Montreal.

INTERNSHIPS IN VETERANS ADMINISTRATION HOSPITALS

The Veterans Administration is offering 259 internships to qualified graduates of recognized medical schools in thirteen hospitals, beginning July 1, 1950. Pilot programs have already begun in two of these hospitals, at McKinney, Texas, and Chamblee, Georgia, affiliated, respectively, with Southwestern Medical College and Emory University.

The intern program will be conducted under the direction of the deans' committees and in co-operation with medical schools in the vicinity of the hospitals selected. Medical, surgical and rotating services are being offered.

AMERICAN NEUROLOGICAL ASSOCIATION

At the seventy-fourth annual meeting of the American Neurological Association, held in Atlantic City, New Jersey, from June 13 to 15, the following officers were elected for the year 1949–1950: president, Dr. Henry W. Woltman; first vice-president, Dr. Johannes M. Nielsen; second vice-president, Dr. E. Jefferson Browder; secretary-treasurer, Dr. H. Houston Merritt; and assistant secretary, Dr. Charles Rupp.

CORRESPONDENCE

HEPATITIS WITHOUT JAUNDICE

To the Editor: Dr. T. J. Domenici, in the January 20 issue of the *Journal*, reported the cases of 4 patients and stated that they had hepatitis without jaundice or hepatomegaly. That such a syndrome exists is not denied by any physician, but I should like to point out certain facts. If these patients had infectious hepatitis, the group formed a minor epidemic of the disease. It is curious that none of them or their associate nurses are said to have had jaundice, clinically or chemically.

A transient elevation in the cephalin-cholesterol flocculation and thymol turbidity tests is not, in itself, evidence of parenchymal liver damage. These laboratory phenomena indicate only that there is some nonspecific change in the serum proteins.

A more sensitive test of liver function — the bromsulfalein reaction — should be abnormal before it should be concluded that these patients had liver disease.

Visualization of the size of the liver by a scout film of the abdomen would have helped.

Of particular interest was the fact that the third patient had a diarrhea, consisting of four or five watery stools a day. In contrast to the battery of blood studies that she received, examination of her feces might certainly have been done.

It is not impossible that these patients had *amebic* hepatitis, or amebiasis without hepatitis, it seems to me.

I believe that the author is only entitled to assert, on the basis of his clinical reports, that he saw 4 young women with indeterminate gastrointestinal complaints and weight loss, who exhibited right-upper-quadrant tenderness and changes in certain laboratory tests that are usually considered evidence of liver damage. The evidence for infectious hepatitis is wanting.

JOHN W. WALSH, M.D.

Brooklyn, New York

Dr. Walsh's letter was referred to Dr. Domenici, who replied as follows:

To the Editor: The absence of jaundice, both chemically and clinically, in hepatitis cannot be considered unusual, since it was not uncommon in soldiers in World War II. Barker, Capps and Allen, in their article "Acute Hepatitis in the Mediterranean theater, including Acute Hepatitis without Jaundice" (*J. A. M. A.* **128**:997-1003, 1945), state

that "hepatitis without jaundice was probably as common as hepatitis with jaundice in the Mediterranean theater."

The elevation of the cephalin-cholesterol flocculation and thymol turbidity was more than transient. The cephalin-cholesterol flocculation actually followed the clinical course rather closely. It is well known that these phenomena result from a change in serum protein. In some cases, this change is secondary to parenchymatous liver damage. Yardumian and Weisband, in their article "Cephalin Cholesterol Flocculation Test in Liver Disease" (*Am. J. Clin. Path.* **13**:383-392, 1943), state that "when there is parenchymatous liver damage the cephalin-cholesterol flocculation test is invariably positive." In their series of cases, all cases with liver disease gave a positive result; 90 per cent of unselected controls were negative. Rosenberg and Soskin, in their article "Comparison of Cephalin-Cholesterol Flocculation Test with Various Criteria of Liver Function (with note on significance of hyperexcretion of hippuric acid)" (*Am. J. Digest. Dis.* 8:421-432, 1941), found "the cephalin-cholesterol flocculation test to be positive in 98 out of 100 cases of 'unquestionable' liver disease." In the same series of cases the bromsulfalein test was positive in only 68 per cent. It is the belief of the authors that the cephalin-cholesterol flocculation is the most sensitive test available.

As already indicated, it is not a unanimous opinion that the bromsulfalein reaction is the most sensitive test of liver function. As a matter of fact, some consider it one of the least sensitive tests. Moreover, it is accepted teaching that in determining liver damage, it is necessary to use a battery of tests since any one procedure may not be informative and actually misleading.

X-ray study was performed in all these patients, and no mention was made of liver shadow, although, admittedly, it was not looked for specifically.

Only 1 patient had diarrhea. This, however, does not excuse the lack of stool examination for ova and parasites. Amebic hepatitis or amebiasis without hepatitis, however, must certainly be an outside possibility in nurses who have not been out of New England or in the armed forces.

It is true that the gastrointestinal complaints were vague, but anorexia and sharply localized tenderness in the upper right quadrant were definite.

T. J. Domenici, M.D.

Baldwinsville, Massachusetts

"TO LIMP"

To the Editor: In the review of *Peripheral Vascular Diseases: Diagnosis and treatment*, by David W. Kramer, M.D., published in the *Journal* for June 30, the reviewer, obviously a competent person, makes the common mistake of interpreting the term "claudication" as "cramps." It is a small point, perhaps, but claudication comes from the verb "to limp," not "to close." It therefore means correctly "limp." When put as a question, incidentally, the correct answer has never been given me by student, house staff or visiting physician.

It is interesting that neither author nor reviewer has checked the correct definition of the word. Originally the description was an objective one, and not a subjective one of "cramps."

Albert S. Murphy, M.D.

Boston, Massachusetts

Note: Neither Webster nor Dorland gives any other definition for claudication than limping or lameness, as indicated by Dr. Murphy. — Ed.

BOOKS RECEIVED

The receipt of the following books is acknowledged, and this listing must be regarded as a sufficient return for the courtesy of the sender. Books that appear to be of particular interest will be reviewed as space permits. Additional information in regard to all listed books will be gladly furnished on request.

Occupational Marks and Other Physical Signs: A guide to personal identification. By Francesco Ronchese, M.D., instructor in dermatology, Boston University School of Medicine, and dermatologist-in-chief, Rhode Island Hospital, Providence, Rhode Island. With a foreword by John G. Downing, M.D., professor of dermatology, Boston University School of Medicine and Tufts College Medical School. 8°, cloth, 181 pp., with 151 illustrations. New York: Grune and Stratton, 1948. $5.50.

In this essay Dr. Ronchese discusses the dermal marks, including calluses and scars, met with in various occupations. Some space is devoted to the mouth, nails and hair. There is a special chapter on the legal aspects of deceptive markings. Two fifths of the volume is text; the remainder is devoted to the instructive illustrations. There is a large bibliography and a good index. The book is well published, and the illustrations are excellent. One is reminded of Dr. A. Conan Doyle and his famous character of Sherlock Holmes and his knowledge of physical markings that he used in his profession. This book should be in all collections on dermatology and medicolegal medicine.

Physician's Handbook. By John Warkentin, Ph.D., M.D., and Jack D. Lange, M.S., M.D. Fifth edition. 16°, cloth, 294 pp., illustrated. Palo Alto, California: University Medical Publishers, 1948. $2.00.

This fifth edition of a popular pocket handbook has been fully revised and brought up to date. It presents a summary of diagnostic and clinical procedures and of facts, readily available for quick reference by general practitioners on their visits. Important tables are printed on the paper covers — a practice not to be encouraged. There is a good index. The binding is of the ring type.

NOTICES

ANNOUNCEMENTS

Dr. Constance Curtiss announces the opening of an office at 21 Bay State Road, Boston, for the practice of internal medicine.

Dr. Earl S. Seale announces the removal of his office to 99 Bay State Road, Boston.

NEW ENGLAND PEDIATRIC SOCIETY

A meeting of the New England Pediatric Society will be held on Wednesday, September 28, in Boston. The afternoon clinical session will be conducted by Dr. Allan Butler and his staff in the amphitheater of Building C, Harvard Medical School. The evening meeting will be held at Longwood Towers.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY, INC.

New bulletins, incorporating changes made at the recent meeting of the Board, are now available for distribution upon application and give details of all new regulations.

The next scheduled examination (Part I), written examination and review of case histories for all candidates will be held in various cities of the United States and Canada on Friday, February 3, 1950. Application may be made until November 5, 1949. Application forms and bulletins are sent upon request to the American Board of Obstetrics and Gynecology, 1015 Highland Building, Pittsburgh 6, Pennsylvania.

WARREN TRIENNIAL PRIZE

The Warren Triennial Prize for the best dissertation on some special subject in physiology, surgery or pathology will be awarded this year. Essays may be written in English, French or German and must be typewritten and suitably bound. Work that has previously been published will not be considered, and original work will be given a high value. Essays will be received until November 15, 1949. The awards will consist of a first prize of $1500 and a second prize of $500.

The judges will be the General Executive Committee of the Massachusetts General Hospital.

(*Notices concluded on page xiii*)